

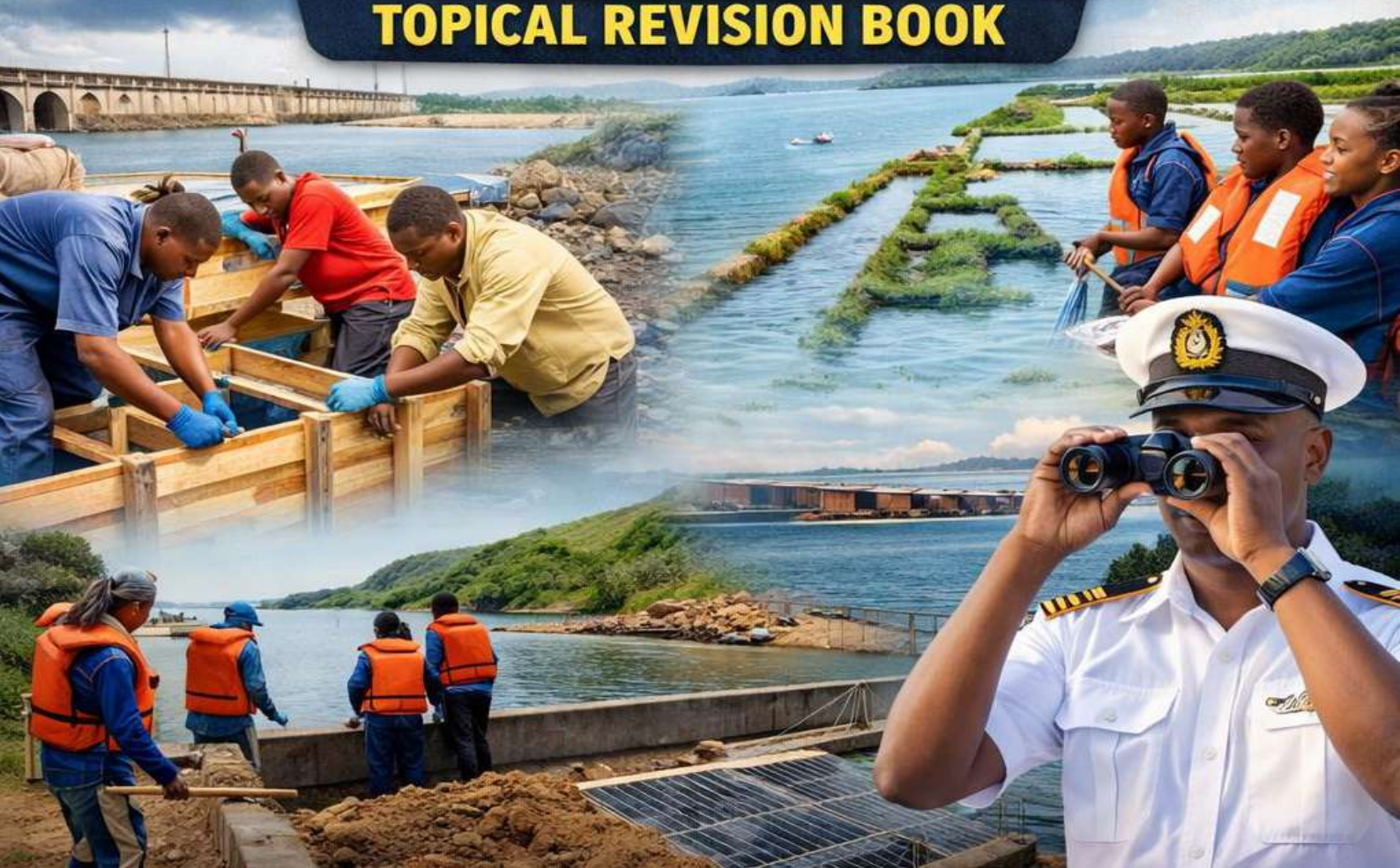
COMPETENCE BASED EDUCATION

SENIOR SCHOOL GRADE 10



MARINE FISHERIES TECHNOLOGY

TOPICAL REVISION BOOK



TOPICAL REVISION QUESTIONS

STRAND 1.0: FISH BIOLOGY AND ECOLOGY

SECTION A: (25 MARKS)

1. Define the following terms: (4 marks)

a) Marine fisheries

b) Freshwater fisheries

c) Aquaculture

d) Ecosystem

2. State TWO differences between marine and freshwater environments. (4 marks)

- i. _____
- ii. _____

3. Give TWO examples of marine water bodies. (2 marks)

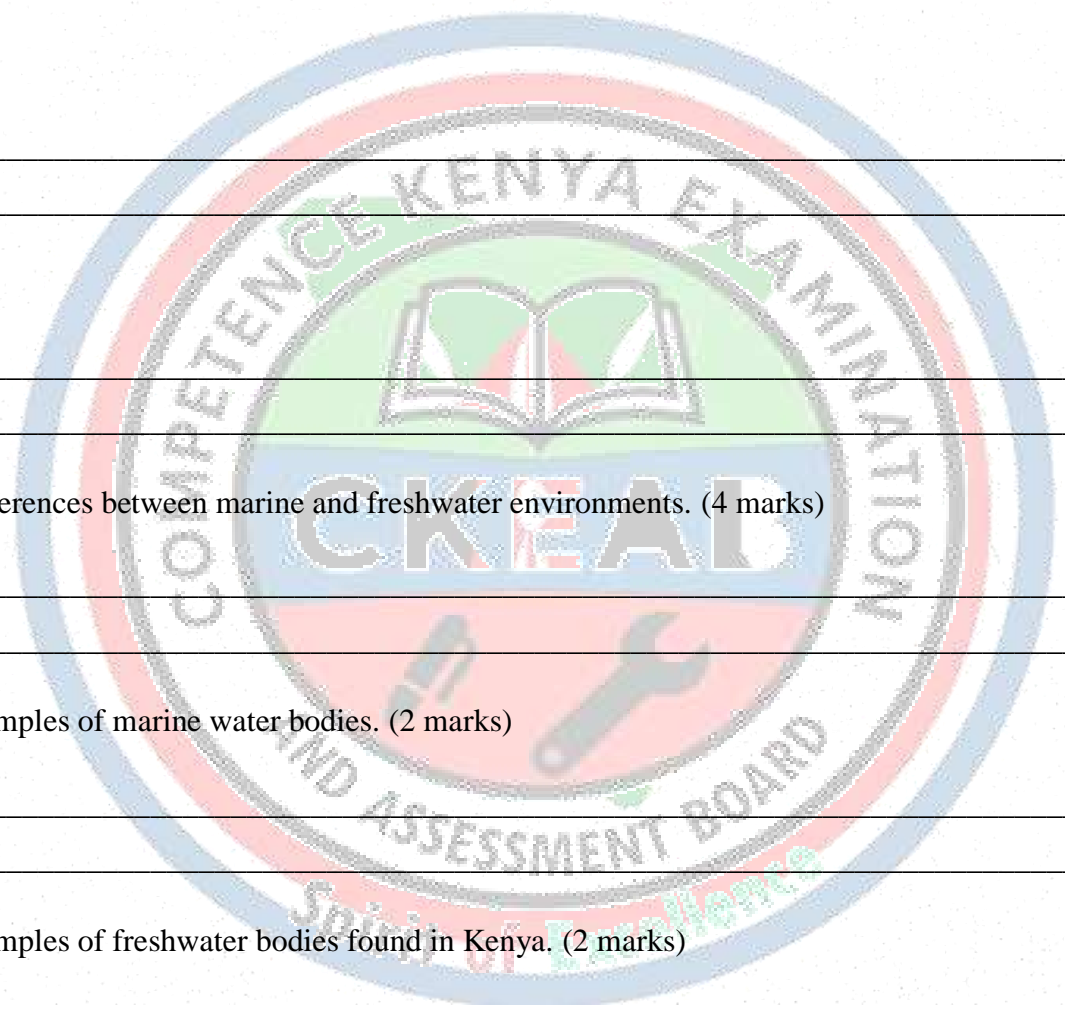
- i. _____
- ii. _____

4. Give TWO examples of freshwater bodies found in Kenya. (2 marks)

- i. _____
- ii. _____

5. List FOUR aquatic ecosystems. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____



6. Name THREE career opportunities related to marine and freshwater fisheries. (3 marks)

- i. _____
- ii. _____
- iii. _____

7. State THREE economic/business opportunities found in fisheries. (3 marks)

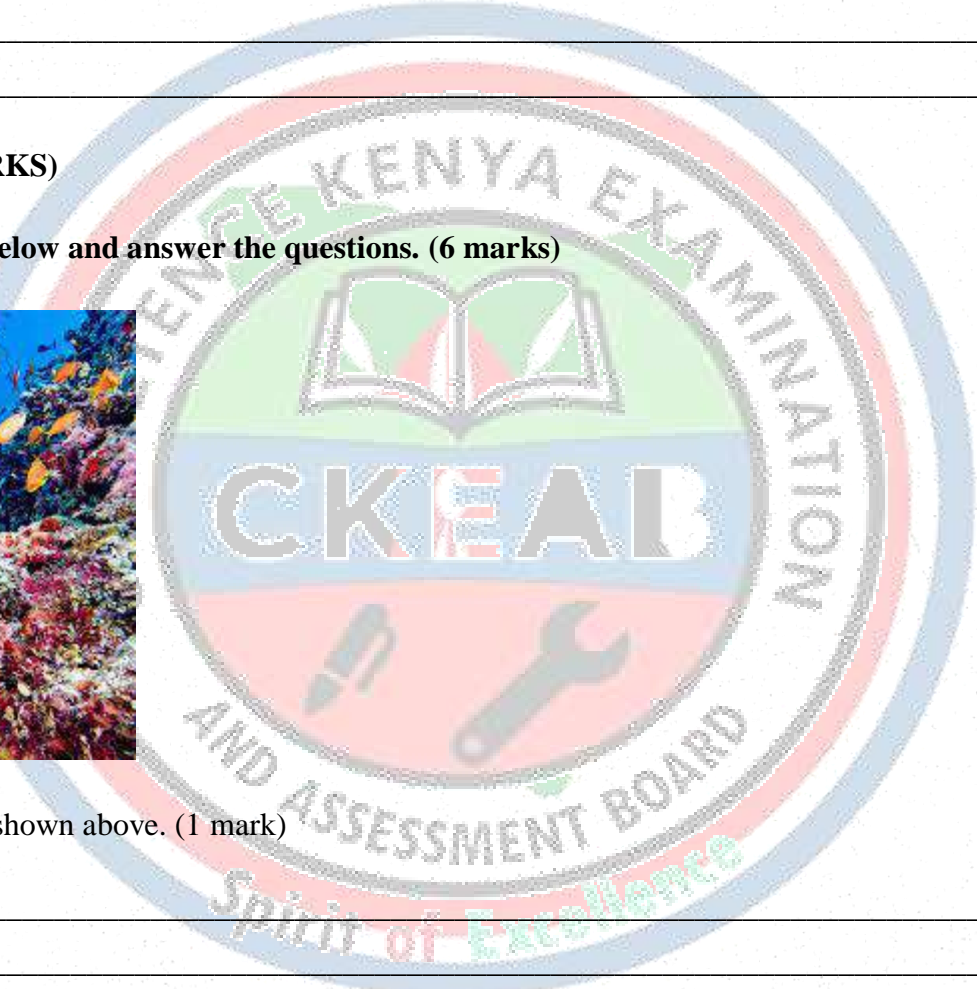
- i. _____
- ii. _____
- iii. _____

8. Identify THREE physical characteristics of oceans. (3 marks)

- i. _____
- ii. _____
- iii. _____

SECTION B: (50 MARKS)

9. Study the diagram below and answer the questions. (6 marks)



a) Name the ecosystem shown above. (1 mark)

b) Give TWO ways this ecosystem supports fish life. (2 marks)

- i. _____
- ii. _____

c) State TWO human activities that may destroy this ecosystem. (2 marks)

- i. _____
- ii. _____

d) Give ONE conservation measure. (1 mark)

10. A learner visited a fish landing site at Lake Victoria. (4 marks)

a) Mention TWO activities that take place at a landing site. (2 marks)

- i. _____
- ii. _____

b) State TWO opportunities learners can identify from the visit. (2 marks)

- i. _____
- ii. _____

11. Explain FOUR opportunities in marine and freshwater fisheries under: (8 marks)

a) Career opportunities (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

b) Business/economic opportunities (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

12. Study the illustration below. (4 marks)



a) Name the ecosystem shown. (1 mark)

b) State THREE benefits of mangroves to fisheries. (3 marks)

- i. _____
- ii. _____
- iii. _____

13. A student is asked to use a phone or computer to research “aquaculture”. (4 marks)

a) State TWO reliable electronic sources of information. (2 marks)

- i. _____
- ii. _____

b) Give TWO advantages of using electronic media over print media. (2 marks)

- i. _____
- ii. _____

14. Describe THREE chemical characteristics of marine water. (6 marks)

- i. _____
- ii. _____
- iii. _____

15. Explain THREE biological characteristics of freshwater environments. (6 marks)

- i. _____
- ii. _____
- iii. _____

16. A school invited a marine biologist to talk to learners. (4 marks)

a) State TWO topics the biologist may discuss on sustainability. (2 marks)

- i. _____
- ii. _____

b) Give TWO reasons why such a talk is important to learners. (2 marks)

- i. _____
- ii. _____

17. Explain how estuaries are useful in supporting fish populations. (6 marks)

- i. _____
- ii. _____
- iii. _____



18. A learner observes an estuary where a river meets the ocean. (4 marks)

a) Define an estuary. (1 mark)

b) State THREE characteristics of estuaries. (3 marks)

- i. _____
- ii. _____
- iii. _____

19. A fish processing factory is located near the coast. (4 marks)

a) State TWO reasons why the factory is located near the coast. (2 marks)

- i. _____
- ii. _____

b) Give TWO employment opportunities in such a factory. (2 marks)

- i. _____
- ii. _____

20. The diagram below shows an aquatic food chain. (4 marks)

Phytoplankton → Zooplankton → Small fish → Large fish → Human

a) Identify the producer. (1 mark)

b) Identify the primary consumer. (1 mark)

c) Explain why humans are the final consumers. (2 marks)

- i. _____
- ii. _____

21. Describe FOUR ways schools can sensitise family and peers about aquatic ecosystems. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

SECTION C: (25 MARKS)

22. A county government wants to invest in fisheries. (6 marks)

a) Propose THREE marine fisheries projects. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Propose THREE freshwater fisheries projects. (3 marks)

- i. _____
- ii. _____
- iii. _____

23. Study the case study below and answer the questions. (7 marks)

A lake near a town has experienced increased pollution. Plastic waste is seen near the shore, and fish catches have reduced. Local youth are unemployed.

a) Explain THREE ways pollution can reduce fish populations. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Suggest TWO youth-led business opportunities that can arise from solving the problem. (2 marks)

- i. _____
- ii. _____

c) Give TWO sustainability measures to protect the lake. (2 marks)

- i. _____
- ii. _____

24. A learner claims: “Aquatic ecosystems are not important because fish can live anywhere in water.” (6 marks)

Write a response to correct the learner using:

a) TWO scientific explanations (2 marks)

- i. _____
- ii. _____

b) TWO examples of ecosystems and their roles (2 marks)

- i. _____
- ii. _____

c) TWO conservation reasons (2 marks)

- i. _____
- ii. _____

25. A school plans a field visit to a fish farm and a landing site. (6 marks)

a) Outline TWO importance of a fish farm (2 marks)

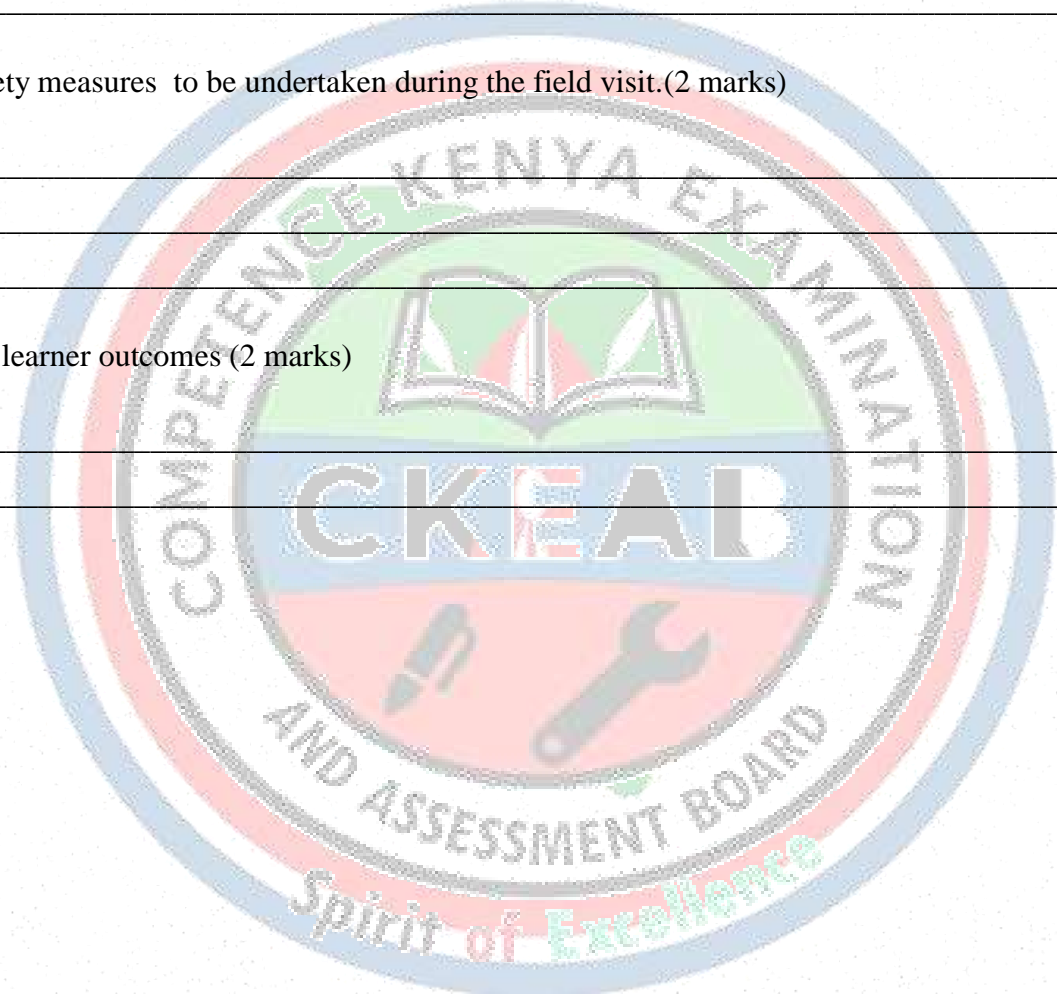
- i. _____
- ii. _____

b) State TWO safety measures to be undertaken during the field visit.(2 marks)

- i. _____
- ii. _____
- iii. _____

c) TWO expected learner outcomes (2 marks)

- i. _____
- ii. _____



STRAND 1.0: FISH BIOLOGY AND ECOLOGY

SUB-STRAND 1.2: FISH MORPHOLOGY AND ANATOMY

SECTION A: (25 MARKS)

1. Define the term “fish morphology.” (2 marks)

2. Define the term “fish anatomy.” (2 marks)

3. Name FOUR external body parts of a fish. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

4. Name THREE internal organs found in a fish. (3 marks)

- i. _____
- ii. _____
- iii. _____

5. State TWO functions of scales in fish. (2 marks)

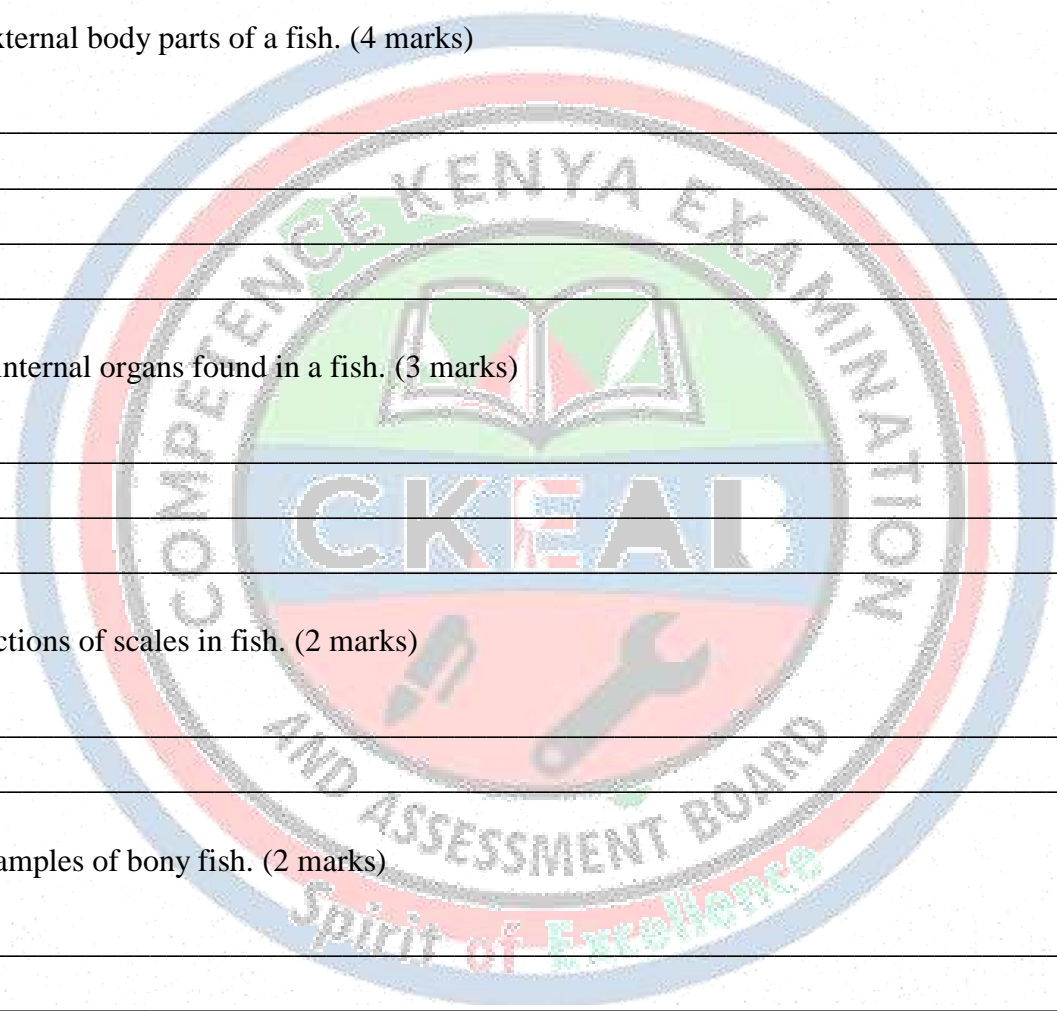
- i. _____
- ii. _____

6. Name TWO examples of bony fish. (2 marks)

- i. _____
- ii. _____

7. Name TWO examples of cartilaginous fish. (2 marks)

- i. _____
- ii. _____



8. State THREE differences between bony and cartilaginous fishes. (6 marks)

- i. _____
- ii. _____
- iii. _____

9. Name TWO types of fins found in most fish. (2 marks)

- i. _____
- ii. _____

SECTION B: (50 MARKS)

10. Study the labelled fish diagram below and answer the questions. (6 marks)



a) Name the fin used mainly for steering. (1 mark)

b) Identify TWO parts used for breathing and sensing. (2 marks)

- i. _____
- ii. _____

c) State TWO functions of the lateral line. (2 marks)

- i. _____
- ii. _____

d) Name ONE external feature used for protection. (1 mark)

11. Explain THREE functions of fins in fish. (6 marks)

- i. _____
- ii. _____
- iii. _____

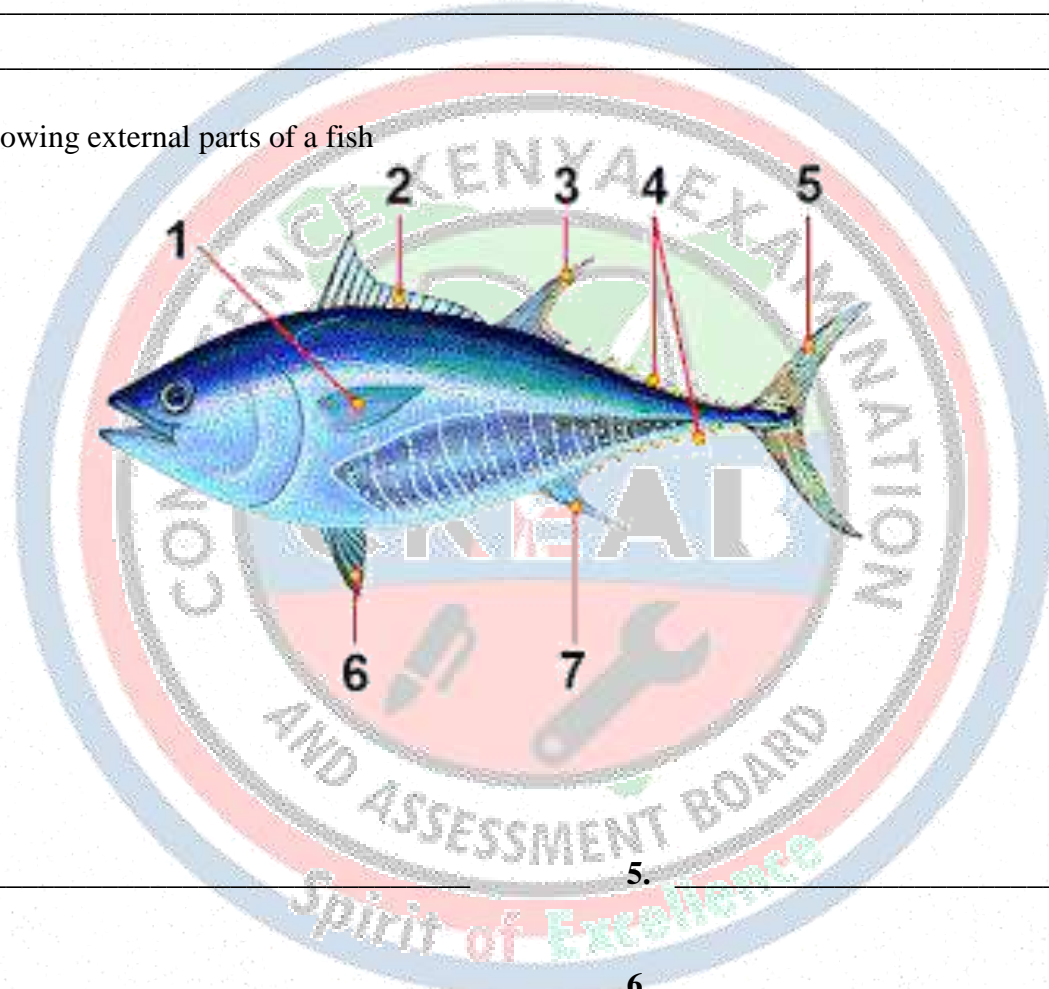
12. A learner observes a tilapia and notices an operculum. (4 marks)

a) What is an operculum? (2 marks)

b) State TWO roles of the operculum. (2 marks)

- i. _____
- ii. _____

c) Identify the following external parts of a fish



- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____

d) Match the external parts of a fish in Column A with their correct functions in Column B.

Column A	Column B
i. Fins	A. Protects the body and reduces water resistance
ii. Gills	B. Helps the fish to breathe in water
iii. Scales	C. Detects vibrations and movement in water
iv. Lateral line	D. Used for swimming, balance and steering
v. Tail (caudal fin)	E. Provides forward movement (propulsion)

e) Match the fish body parts in Column A with their correct functions in Column B.

Column A	Column B
i. Swim bladder	A. Helps in digestion of food
ii. Heart	B. Pumps blood to all parts of the body
iii. Stomach	C. Helps the fish to float and maintain balance in water
iv. Kidneys	D. Helps in reproduction by producing eggs/sperms
v. Gonads (ovaries/testes)	E. Removes wastes and controls water balance

(f) State five characteristics of fish. (5 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____

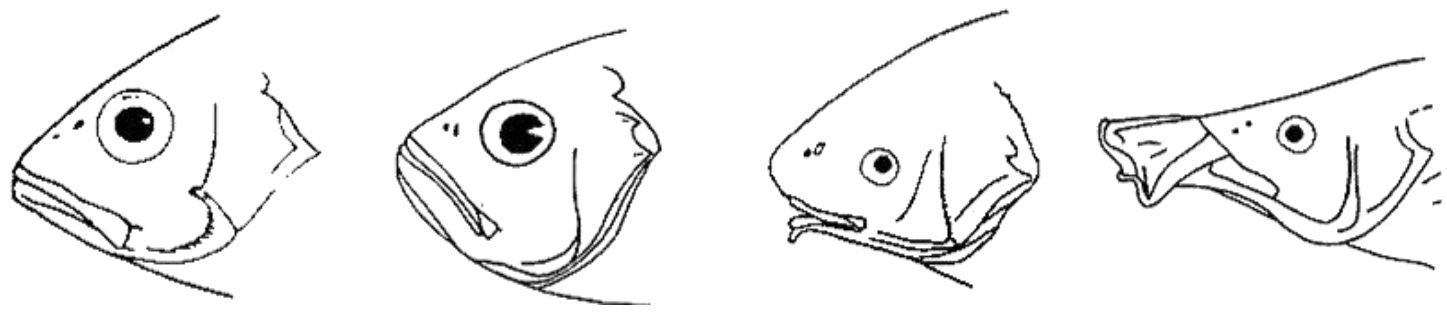
(g) State three adaptations of fish for swimming. (3 marks)

- i. _____
- ii. _____
- iii. _____

(h) State two adaptations of fish for living in marine (salty) waters. (2 marks)

- i. _____
- ii. _____

13. Study the diagram below showing fish mouth positions. (5 marks)



G H I J

(a) Name the following mouth positions:

- G: _____
- H: _____
- I: _____
- J: _____

b) Which mouth type is suitable for surface feeding? (1 mark)

c) Which mouth type is suitable for bottom feeding? (1 mark)

d) Explain why terminal mouth is common in mid-water feeders. (3 marks)

14. Describe THREE differences between scales of bony fish and skin of cartilaginous fish. (6 marks)

- i. _____
- ii. _____
- iii. _____

15. A student uses a digital device to research fish organs. (4 marks)

a) State TWO reliable electronic sources. (2 marks)

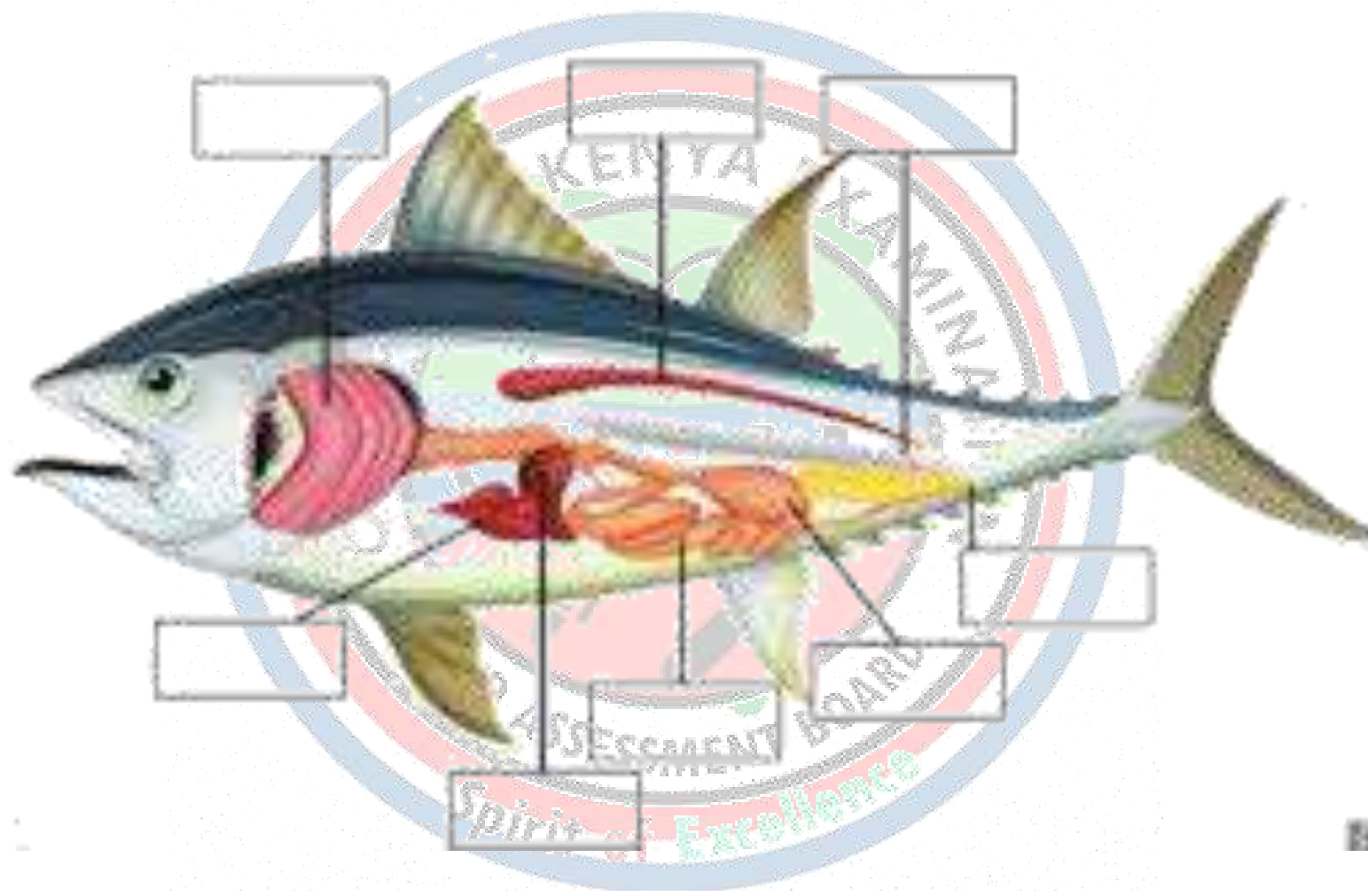
- i. _____
- ii. _____

b) Give TWO advantages of using diagrams and videos for learning fish anatomy. (2 marks)

- i. _____
- ii. _____

16. Study the internal anatomy diagram below. (6 marks)

a) Name the following internal parts of a fish



b) Name the organ used for buoyancy control. (1 mark)

c) Name the organ responsible for respiration. (1 mark)

d) Explain the function of the stomach. (2 marks)

- i. _____
- ii. _____

e) Explain TWO reasons why gills must be kept moist. (2 marks)

- i. _____
- ii. _____

17. Compare bony fish and cartilaginous fish using a table with FOUR features. (8 marks)

	Bony fish	Cartilaginous fish
i		
ii		

18. A learner is asked to measure fish length and weight. (4 marks)

a) State TWO tools used for measuring fish length. (2 marks)

- i. _____
- ii. _____

b) State TWO reasons why fish weight is important in fisheries. (2 marks)

- i. _____
- ii. _____

19. A fish has barbels around its mouth. (4 marks)

a) What are barbels? (2 marks)

b) Explain TWO ways barbels help fish survive. (2 marks)

- i. _____
- ii. _____

20. Explain how the shape of a fish body helps it move in water. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

21. A student counts the number of fins on a fish specimen. (3 marks)

a) Name THREE fins that can be counted externally. (3 marks)

- i. _____
- ii. _____
- iii. _____

22. Study the diagram below and answer the questions. (4 marks)



a) Identify TWO external features that show it is cartilaginous. (2 marks)

- i. _____
- ii. _____

b) Give TWO advantages of a shark's streamlined body. (2 marks)

- i. _____
- ii. _____

SECTION C: (25 MARKS)

23. How do morphology and anatomy of fish help them adapt to their surroundings? (6 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____
- vi. _____

24. (7 marks)

A student keeps two fish in different tanks:

Tank A: has a fish with a **swim bladder**

Tank B : has a fish with **no swim bladder** but it keeps swimming constantly

a) Identify the likely fish group in Tank A. (1 mark)

b) Identify the likely fish group in Tank B. (1 mark)

c) Explain why fish in Tank B must swim constantly. (3 marks)

- i. _____
- ii. _____
- iii. _____

d) Give TWO examples of fish in Tank B. (2 marks)

- i. _____
- ii. _____

25. A learner claims: “All fish have the same body parts, so there is no diversity.” (6 marks)

Write a response to correct the learner using:

a) TWO examples of different fish morphologies (2 marks)

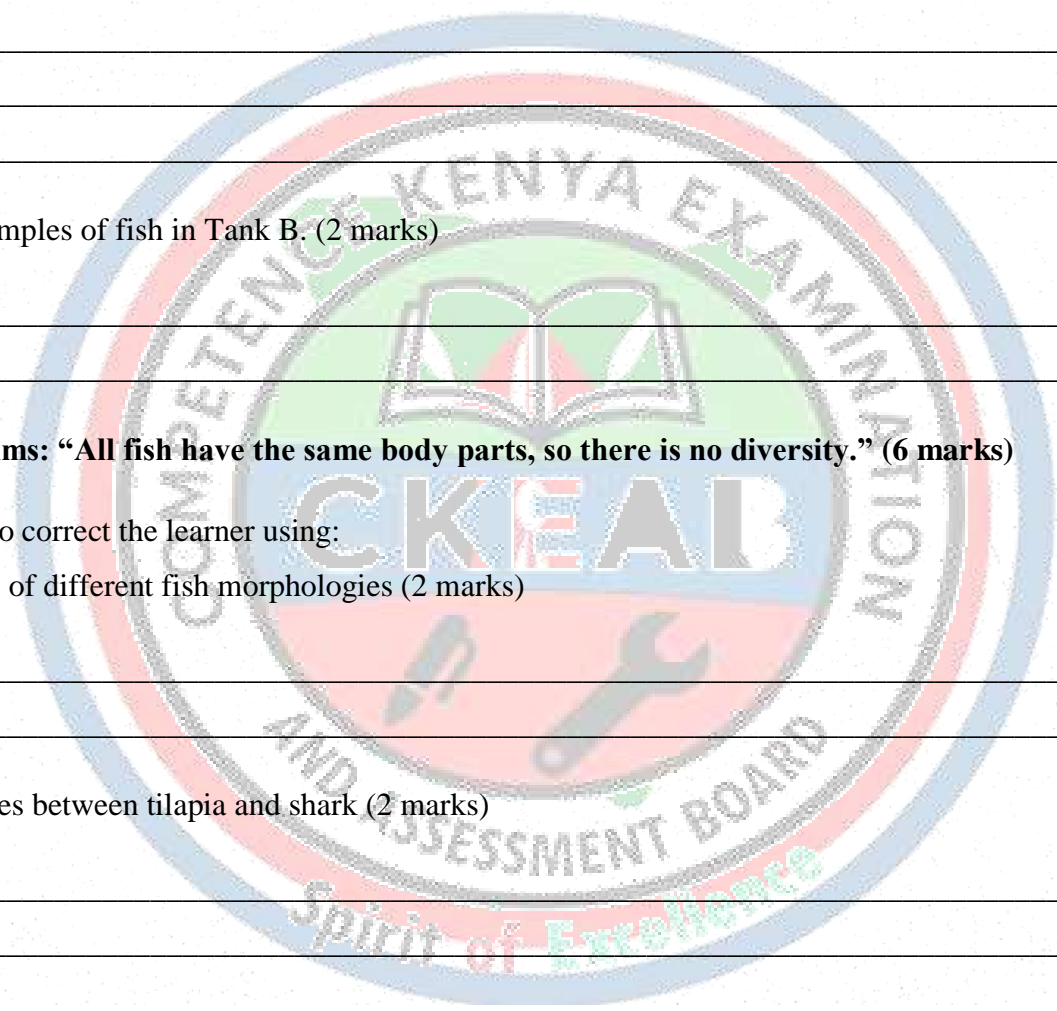
- i. _____
- ii. _____

b) TWO differences between tilapia and shark (2 marks)

- i. _____
- ii. _____

c) TWO reasons diversity is important for survival (2 marks)

- i. _____
- ii. _____



26. (6 marks)

A learner uses a fish specimen at home and records:

- i. Length = 25 cm
- ii. Weight = 350 g
- iii. Number of fins = 6
- iv. Presence of operculum = Yes

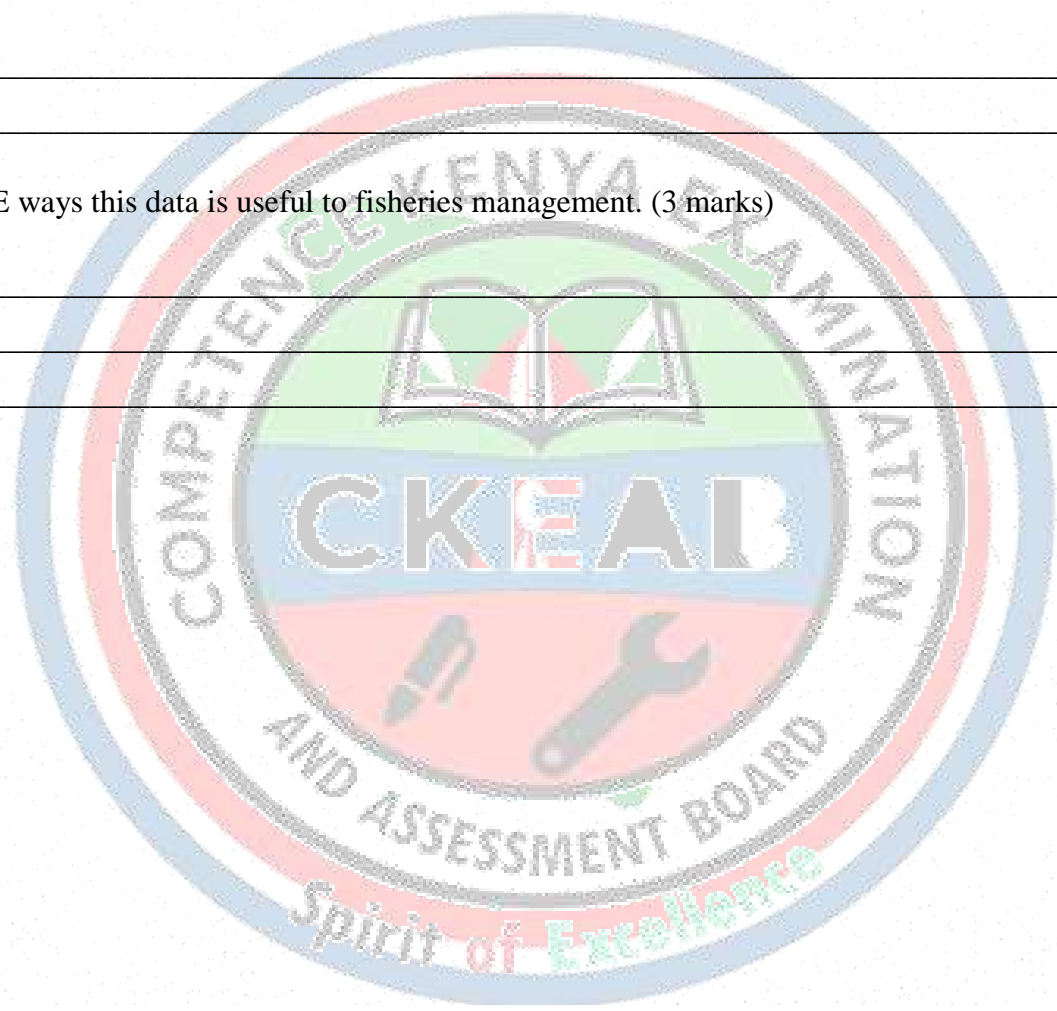
a) Suggest the likely group of fish (bony/cartilaginous). (1 mark)

b) Give TWO reasons for your answer. (2 marks)

- i. _____
- ii. _____

c) Explain THREE ways this data is useful to fisheries management. (3 marks)

- i. _____
- ii. _____
- iii. _____



STRAND 2.0: AQUACULTURE

SUB STRAND 2.1: FUNDAMENTALS OF AQUACULTURE

SECTION A: (25 MARKS)

1. Define the term aquaculture. (2 marks)

2. Name two types of fish farming done in Kenya. (2 marks)

- i. _____
- ii. _____

3. List three examples of aquaculture products. (3 marks)

- i. _____
- ii. _____
- iii. _____

4. State two differences between aquaculture and capture fisheries. (4 marks)

- i. _____
- ii. _____

5. Name the three major aquaculture systems. (3 marks)

- i. _____
- ii. _____
- iii. _____

6. Identify two freshwater fish species commonly farmed in Kenya. (2 marks)

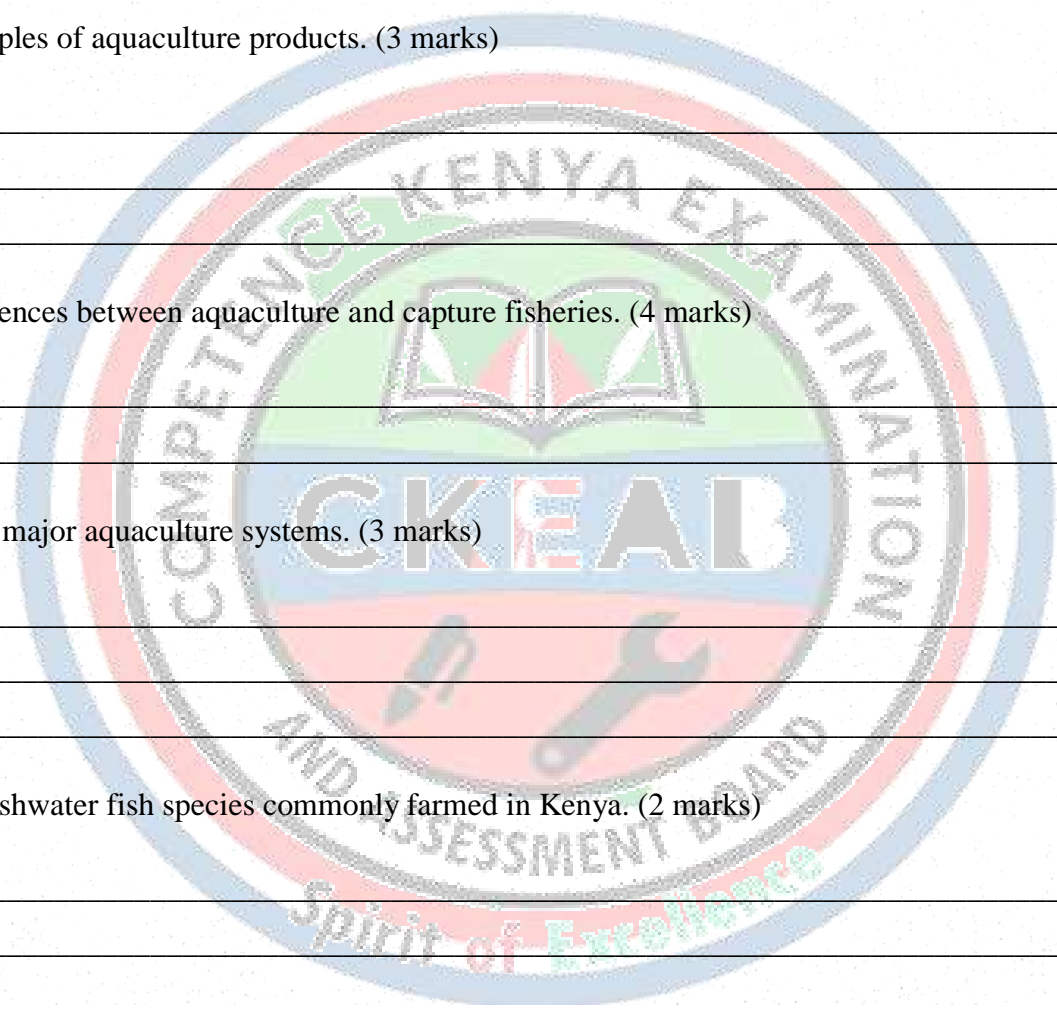
- i. _____
- ii. _____

7. Give two reasons why farmers rear fish in ponds. (2 marks)

- i. _____
- ii. _____

8. State three economic activities supported by aquaculture. (3 marks)

- i. _____
- ii. _____
- iii. _____



9. Write four challenges that affect aquaculture development in Kenya. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

SECTION B: (50 MARKS)

10. Aquaculture Systems (Extensive, Semi-intensive, Intensive)

(a) Explain what is meant by an **extensive aquaculture system**. (2 marks)

(b) Give **two** characteristics of an extensive system. (2 marks)

- i. _____
- ii. _____

(c) Explain what is meant by an **intensive aquaculture system**. (2 marks)

- i. _____
- ii. _____

(d) Give **two** examples of intensive fish farming structures. (2 marks)

- i. _____
- ii. _____

(e) State **two** disadvantages of intensive systems. (2 marks)

- i. _____
- ii. _____

11. Study the diagram below and answer the questions that follow.

SYSTEM A:	SYSTEM B:
Fish in large pond	Fish in tanks
Natural food only	Fed with formulated feeds
Low stocking	High stocking
Low cost	High cost

(a) Identify **System A**. _____ (1 mark)

(b) Identify **System B**. _____ (1 mark)

(c) State **two** advantages of System A. (2 marks)

i. _____

ii. _____

(d) State **two** advantages of System B. (2 marks)

i. _____

ii. _____

(e) Explain why System B requires skilled management. (2 marks)

i. _____

ii. _____

12. Economic Importance of Aquaculture

(a) Explain **four** ways aquaculture contributes to food security in Kenya. (8 marks)

i. _____

ii. _____

iii. _____

iv. _____

(b) State **two** ways aquaculture creates employment. (2 marks)

i. _____

ii. _____

13. A county government starts a fish farming project to reduce unemployment.

(a) State **three** groups of people who can benefit from this project. (3 marks)

i. _____

ii. _____

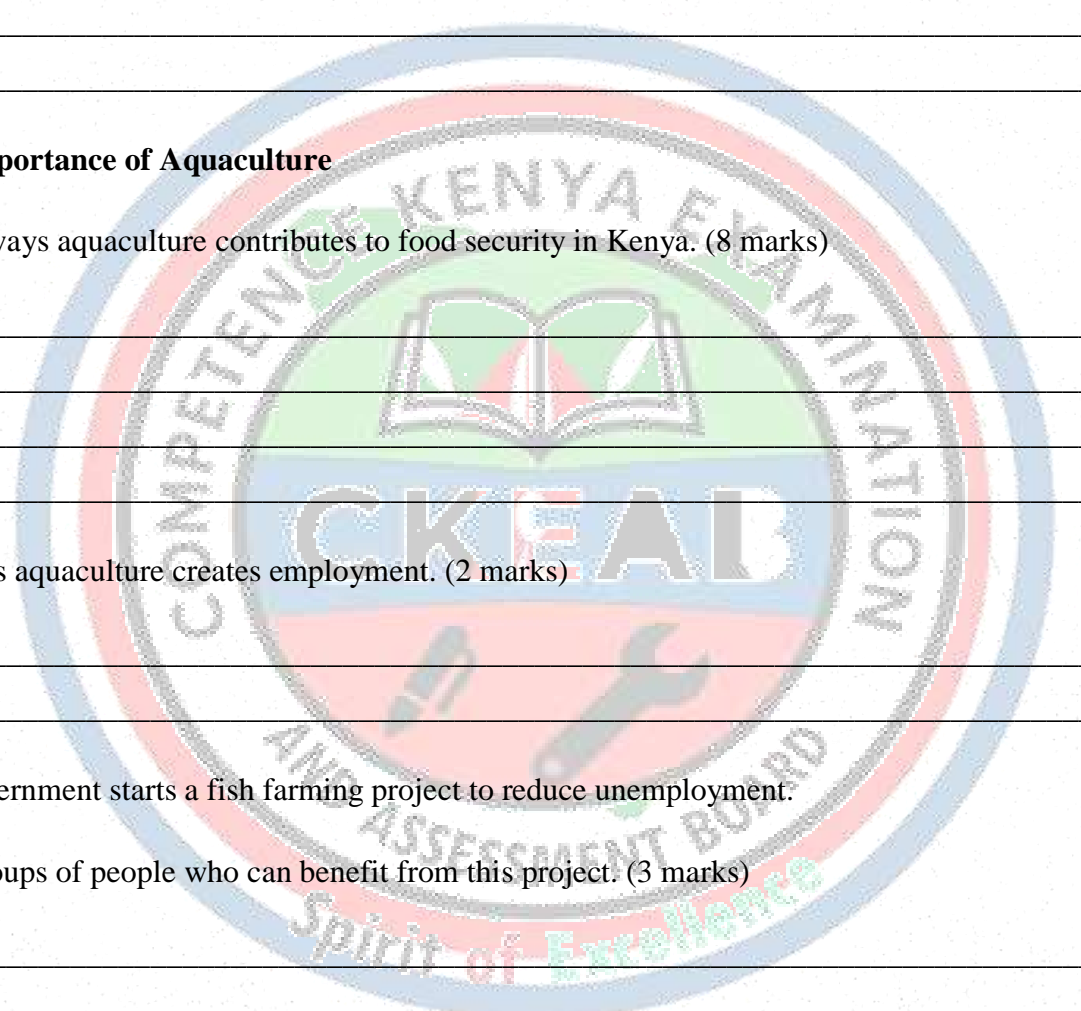
iii. _____

(b) Explain **three** ways the project can improve the local economy. (6 marks)

i. _____

ii. _____

iii. _____



14. Challenges Facing Aquaculture Development

(a) Explain **five** challenges that affect aquaculture development in Kenya. (10 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____
- vi. _____

(b) Suggest **two** possible solutions to any two challenges identified above. (4 marks)

- i. _____
- ii. _____

15. During a class visit to a fish farm, learners observe fish ponds, cages and tanks.

(a) Name the **aquaculture system** represented by ponds in most rural areas. (1 mark)

(b) Name the system represented by tanks with aeration equipment. (1 mark)

(c) Explain **three** reasons why farmers may prefer ponds instead of tanks. (6 marks)

- i. _____
- ii. _____
- iii. _____

SECTION C: (25 MARKS)

16. A youth group in Kisumu County has **KSh 60,000**, access to a small piece of land, and water from a nearby stream. They want to start fish farming.

(a) Recommend the most suitable aquaculture system for them. (2 marks)

(b) Give **four** reasons for your recommendation. (8 marks)

- i. _____
- ii. _____
- iii. _____
- vii. _____

(c) Explain **three** risks the group may face if they choose an intensive system. (6 marks)

- i. _____
- ii. _____
- iii. _____

17. A fish farmer stocks too many fish in a pond but uses little feed. Fish grow slowly and some die.

(a) Identify the aquaculture system being poorly practiced. (2 marks)

(b) Explain why the fish are growing slowly. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

(c) Suggest **three** management changes the farmer should make. (6 marks)

- i. _____
- ii. _____
- iii. _____

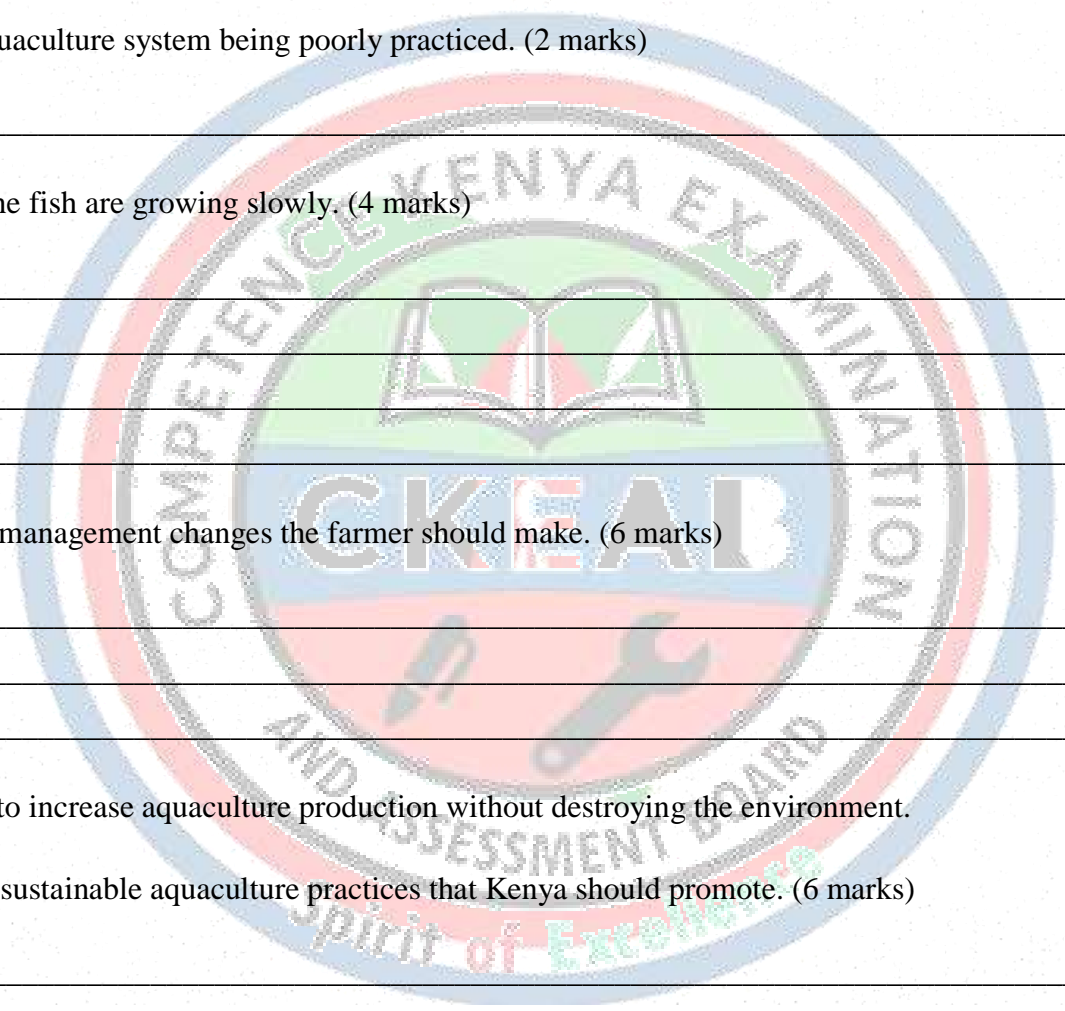
18. Kenya wants to increase aquaculture production without destroying the environment.

(a) Propose **three** sustainable aquaculture practices that Kenya should promote. (6 marks)

- i. _____
- ii. _____
- iii. _____

(b) Explain how each practice supports sustainability. (6 marks)

- i. _____
- ii. _____
- iii. _____



19. (a) Give **THREE** benefits of aquaculture (6 marks)

- i. _____
- ii. _____
- iii. _____

(b) Give **FOUR** benefits of capture fisheries. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

20. (a) Three equipment needed in the construction of an fish pond(3 marks)

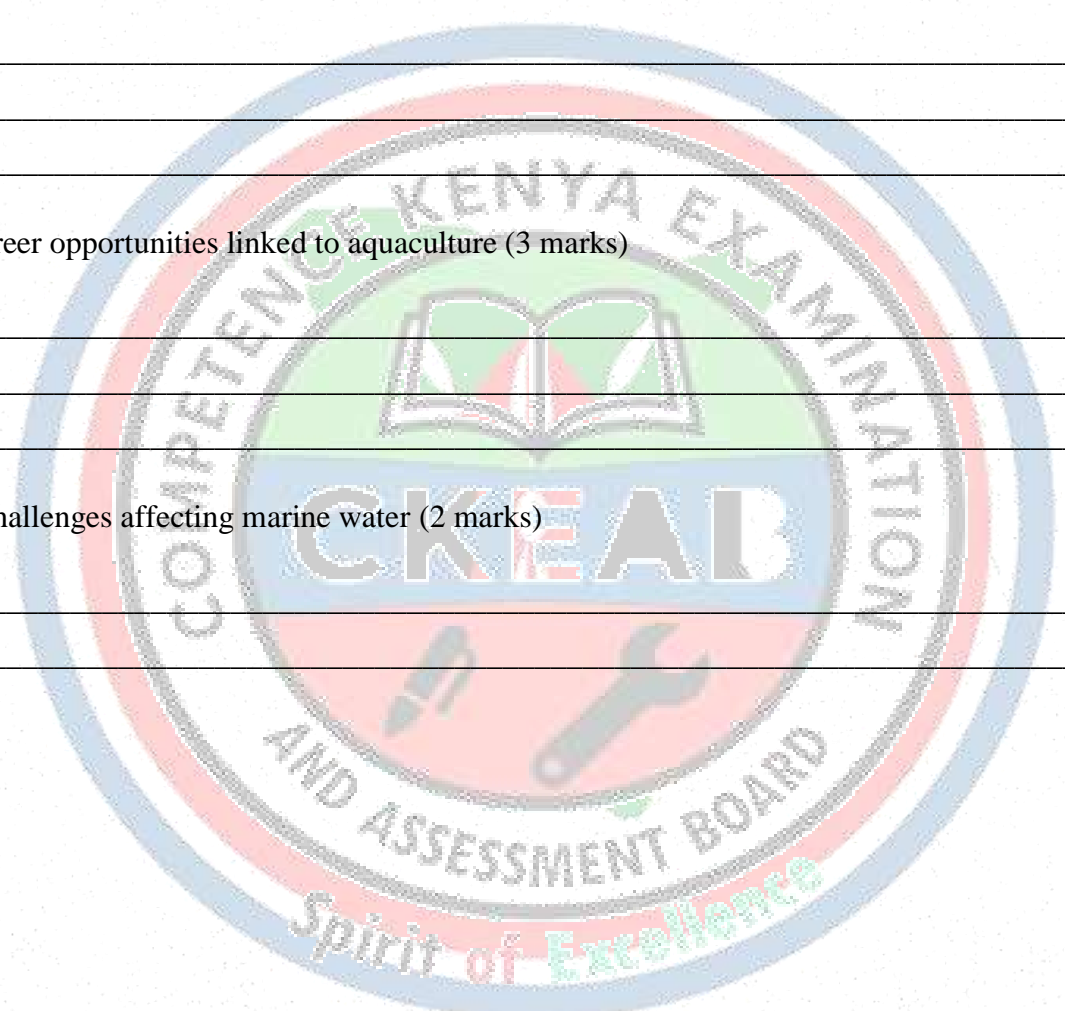
- i. _____
- ii. _____
- iii. _____

(b) State three career opportunities linked to aquaculture (3 marks)

- i. _____
- ii. _____
- iii. _____

(c) Outline two challenges affecting marine water (2 marks)

- i. _____
- ii. _____



STRAND 2.0: AQUACULTURE

SUB-STRAND 2.2: PRODUCTION SYSTEMS

SECTION A: (25 MARKS)

1. Define the term fish production system. (2 marks)

2. List five systems used for culturing fish. (5 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____

3. Name two systems that can be used in marine waters. (2 marks)

- i. _____
- ii. _____

4. State two systems commonly used in freshwater fish farming in Kenya. (2 marks)

- i. _____
- ii. _____

5. Name two advantages of fish ponds. (2 marks)

- i. _____
- ii. _____

6. Identify two materials commonly used to make fish cages. (2 marks)

- i. _____
- ii. _____

7. Name three tools or equipment a learner may use to draw a fish production system. (3 marks)

- i. _____
- ii. _____
- iii. _____



8. State three reasons why learners should visit fish farms and cage sites. (3 marks)

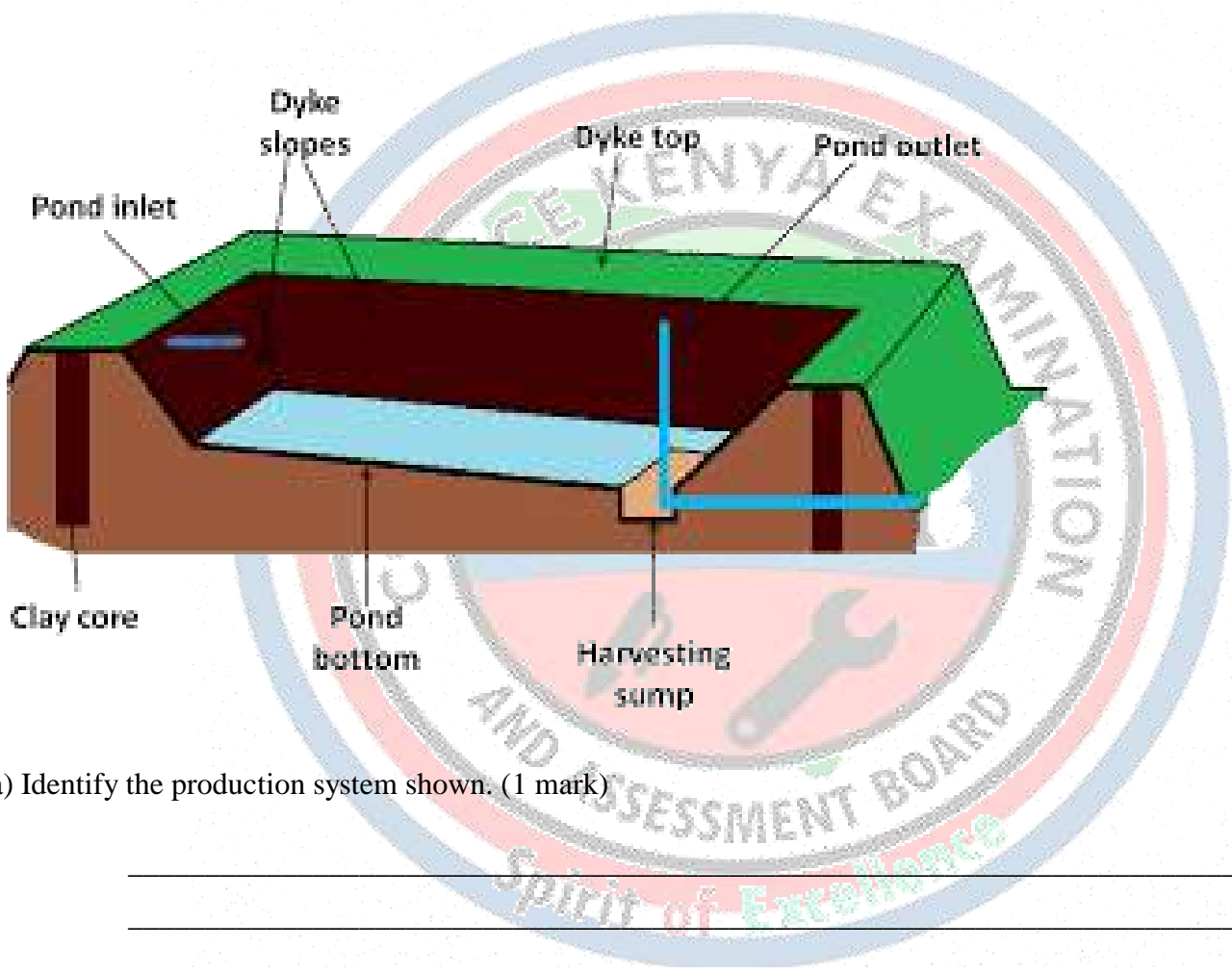
- i. _____
- ii. _____
- iii. _____

9. State two safety rules to observe during a fish farm visit. (4 marks)

- i. _____
- ii. _____

SECTION B: (50 MARKS)

10. Study the illustration below and answer the questions. (6 marks)



a) Identify the production system shown. (1 mark)

b) Name TWO important structures shown. (2 marks)

- i. _____
- ii. _____

c) Explain TWO functions of the inlet. (2 marks)

- i. _____
- ii. _____

d) State ONE advantage of this system. (1 mark)

11. Fish Pond vs Tank System (8 marks)

Complete the table below using FOUR differences.

Feature	Fish Pond	Fish Tank
(a) Construction cost		
(b) Water control		
(c) Stocking density		
(d) Suitability		

(8 marks)

12. Study the diagram below. (6 marks)



a) Identify the system shown. (1 mark)

b) State TWO places where cages can be installed. (2 marks)

- i. _____
- ii. _____

c) Give TWO advantages of cage culture. (2 marks)

- i. _____
- ii. _____

d) State ONE challenge of cage culture. (1 mark)

13. Explain FOUR features of a good fish tank production system. (8 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

14. Raceways (6 marks)

a) What is a raceway in fish production? (2 marks)

b) State TWO characteristics of raceway systems. (2 marks)

- i. _____
- ii. _____

c) State TWO fish species that grow well in raceways. (2 marks)

- i. _____
- ii. _____

15. A learner watches a video about fish pens. (4 marks)

a) What is a fish pen? (2 marks)

b) Give TWO differences between a fish pen and a fish cage. (2 marks)

FISH PEN	FISH CAGE

16. Explain THREE reasons why a farmer may choose ponds instead of tanks. (6 marks)

- i. _____
- ii. _____
- iii. _____

17. Explain THREE reasons why cage culture is more common in large lakes than in small rivers. (6 marks)

- i. _____
- ii. _____
- iii. _____

18. (6 marks)

A student visits a fish farm and observes the following:

- i. Concrete tanks
- ii. Aeration equipment
- iii. Water pipes
- iv. Fish fed using pellets

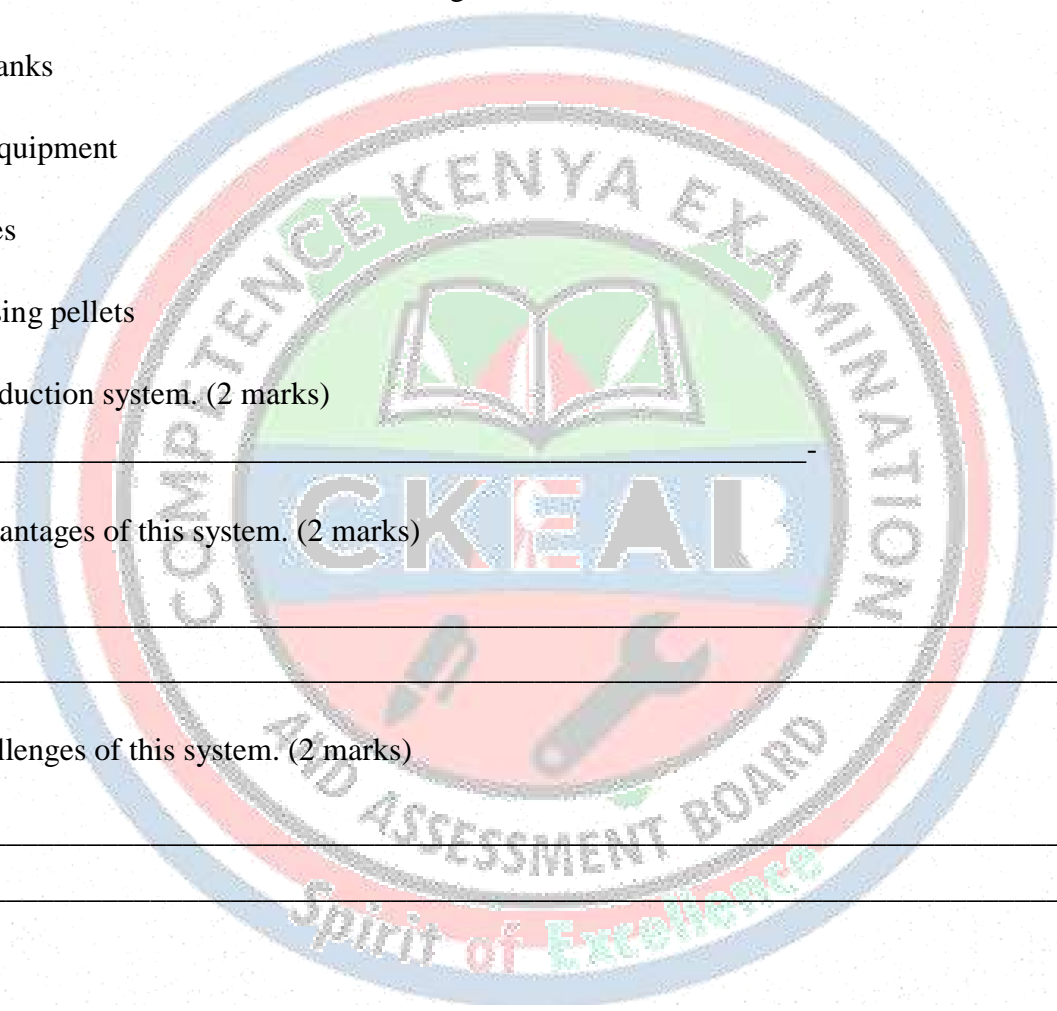
a) Identify the production system. (2 marks)

b) State TWO advantages of this system. (2 marks)

- i. _____
- ii. _____

c) State TWO challenges of this system. (2 marks)

- i. _____
- ii. _____



SECTION C: (25 MARKS)

19. Case Study: Selecting a Production System (10 marks)

A youth group in Homa Bay County wants to start fish farming. They have:

- i. Limited land
- ii. Access to Lake Victoria
- iii. Moderate capital
- iv. A market for tilapia

a) Recommend the best fish production system for them. (2 marks)

b) Give FOUR reasons for your recommendation. (8 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

20. Problem Solving Scenario (8 marks)

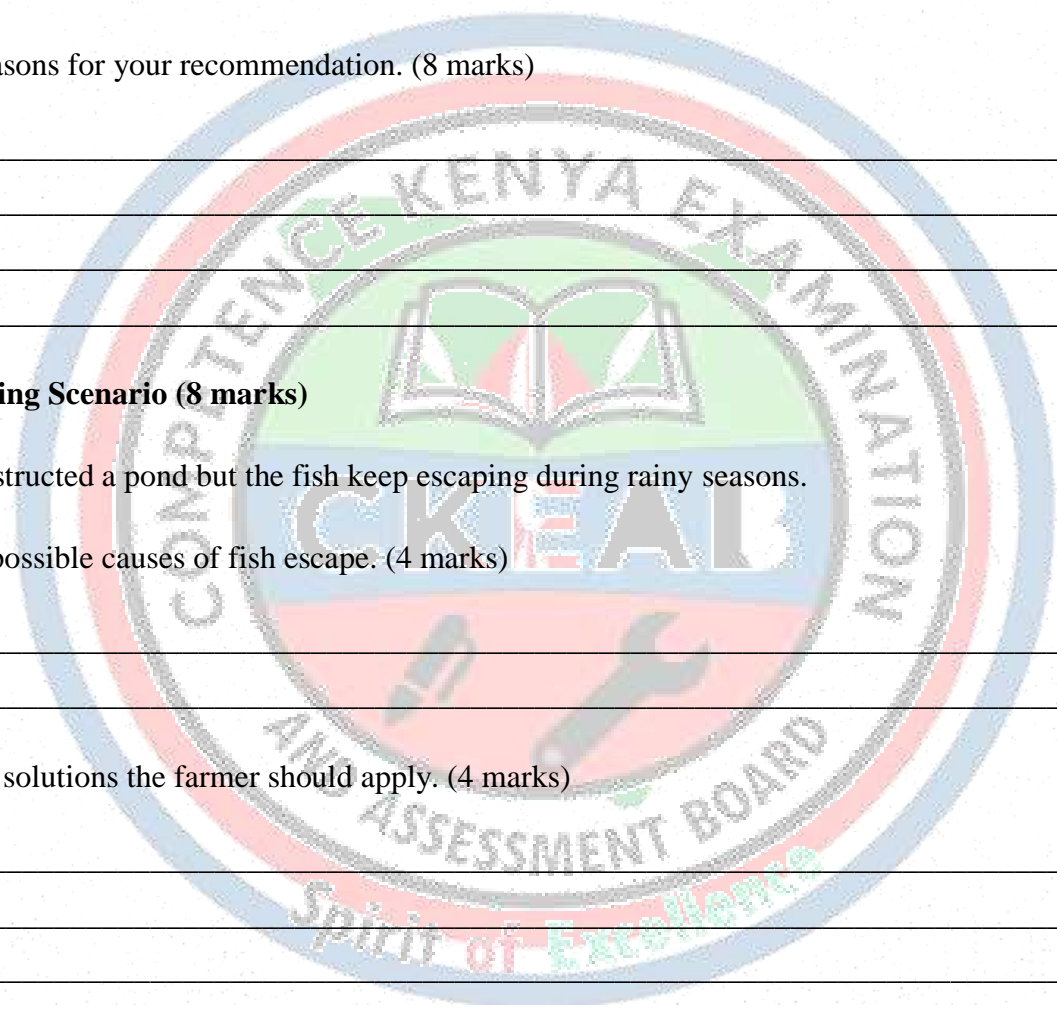
A fish farmer constructed a pond but the fish keep escaping during rainy seasons.

a) Identify TWO possible causes of fish escape. (4 marks)

- i. _____
- ii. _____

b) Suggest FOUR solutions the farmer should apply. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____



21. Drawing and Labelling Task (7 marks)

Draw and label a simple fish production system of your choice using **any ONE** of the following:

- Fish pond
- Fish tank
- Fish cage
- Raceway

Your diagram must include at least **7 labels**. (7 marks)



STRAND 2.0: AQUACULTURE

SUB-STRAND 2.3: FISH PONDS

SECTION A: (25 MARKS)

1. Define the term **fish pond**. (2 marks)

2. State **four** types of fish ponds commonly used in aquaculture. (4 marks)

- i.

- ii.

- iii.

- iv.

3. List **three** factors to consider when selecting a site for a fish pond. (3 marks)

- i.

- ii.

- iii.

4. Name **two** types of soil suitable for fish pond construction. (2 marks)

- i.

- ii.

5. State **three** characteristics of a good pond site regarding water availability. (3 marks)

- i.

- ii.

- iii.

6. Give **two** reasons why accessibility to markets is important when selecting a pond site. (2 marks)

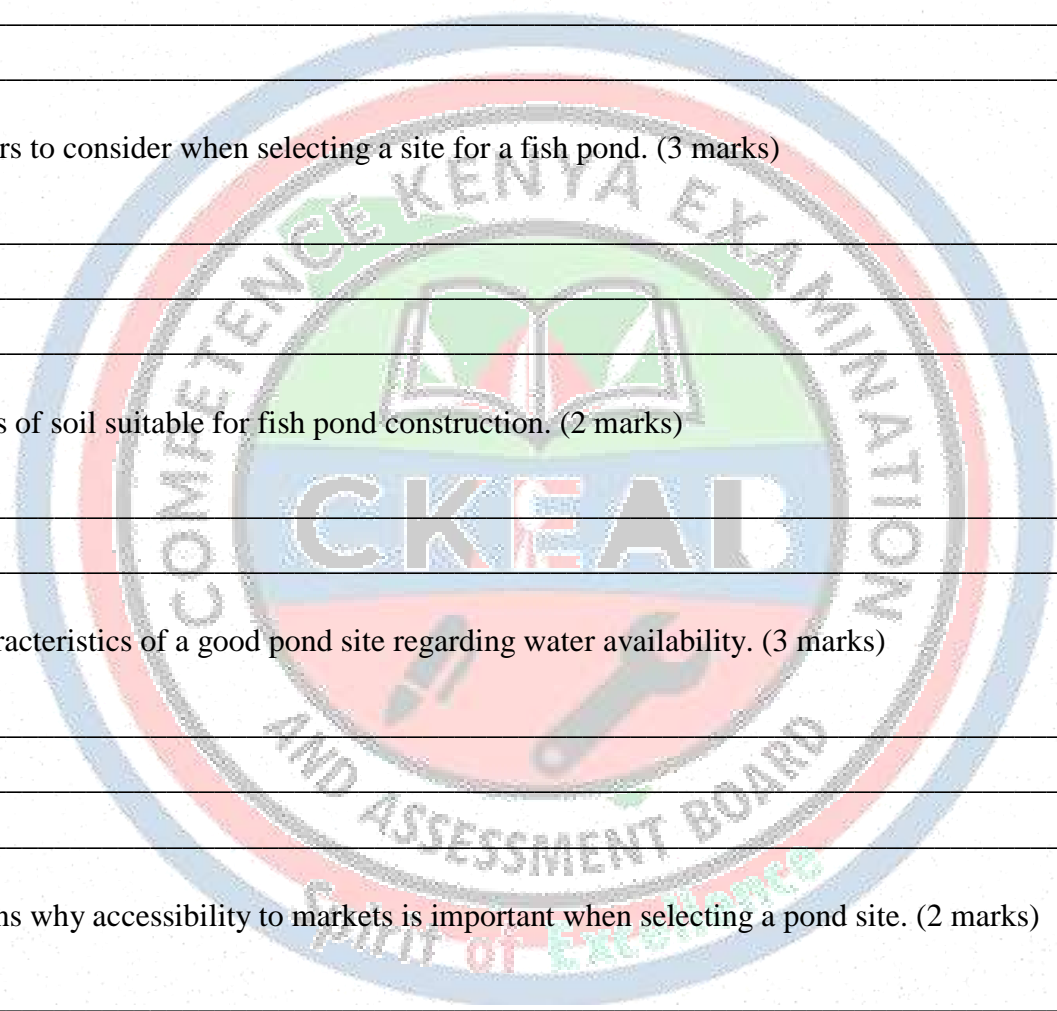
- i.

- ii.

7. State **two** reasons for securing a fish pond. (2 marks)

- i.

- ii.



8. Identify **three** tools used in constructing a simple earthen fish pond. (3 marks)

- i. _____
- ii. _____
- iii. _____

9. Give **two** examples of sources of fingerlings used in stocking ponds. (2 marks)

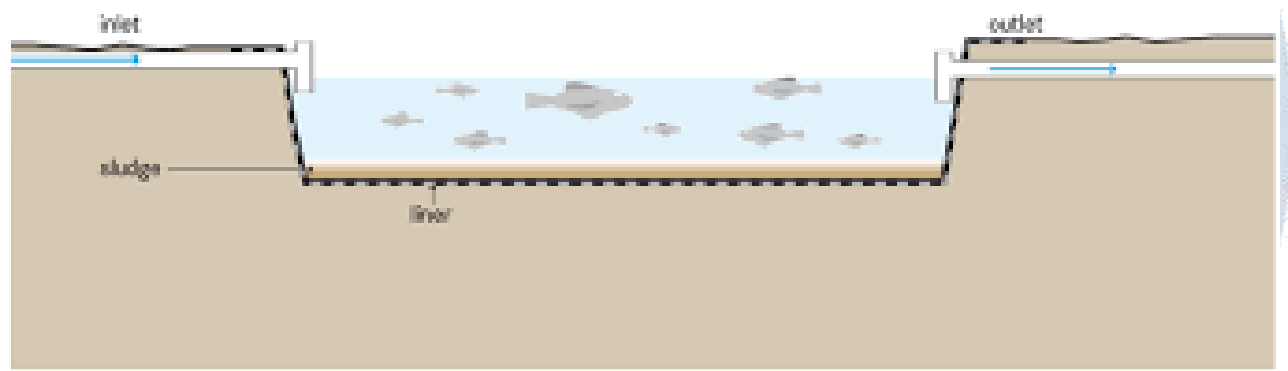
- i. _____
- ii. _____

10. Name **two** materials used for lining wooden fish ponds. (2 marks)

- i. _____
- ii. _____

SECTION B: (50 MARKS)

11. Study the diagram below and answer the questions. (6 marks)



a) Identify the system shown. (1 mark)

b) Name **TWO** important structures in the diagram. (2 marks)

- i. _____
- ii. _____

c) Explain **TWO** functions of the inlet pipe. (2 marks)

- i. _____
- ii. _____

d) State ONE management advantage of this pond. (1 mark)

12. Explain **five factors** to consider when selecting a suitable site for a fish pond. (10 marks)

- i.

- ii.

- iii.

- iv.

- v.

13. A student wants to construct an earthen lined pond. Explain **four steps** involved in constructing it. (8 marks)

- i.

- ii.

- iii.

- iv.

14. Describe **three practices** used in pond management to maintain water quality. (6 marks)

- i.

- ii.

- iii.

15. a) Name to Sources fingerlings (1 mark)

- i.

- ii.

b) Mention two proper ways of Handling fingerlings (2 marks)

- i.

- ii.

c) Explain two reasons for liming the pond (2 marks)

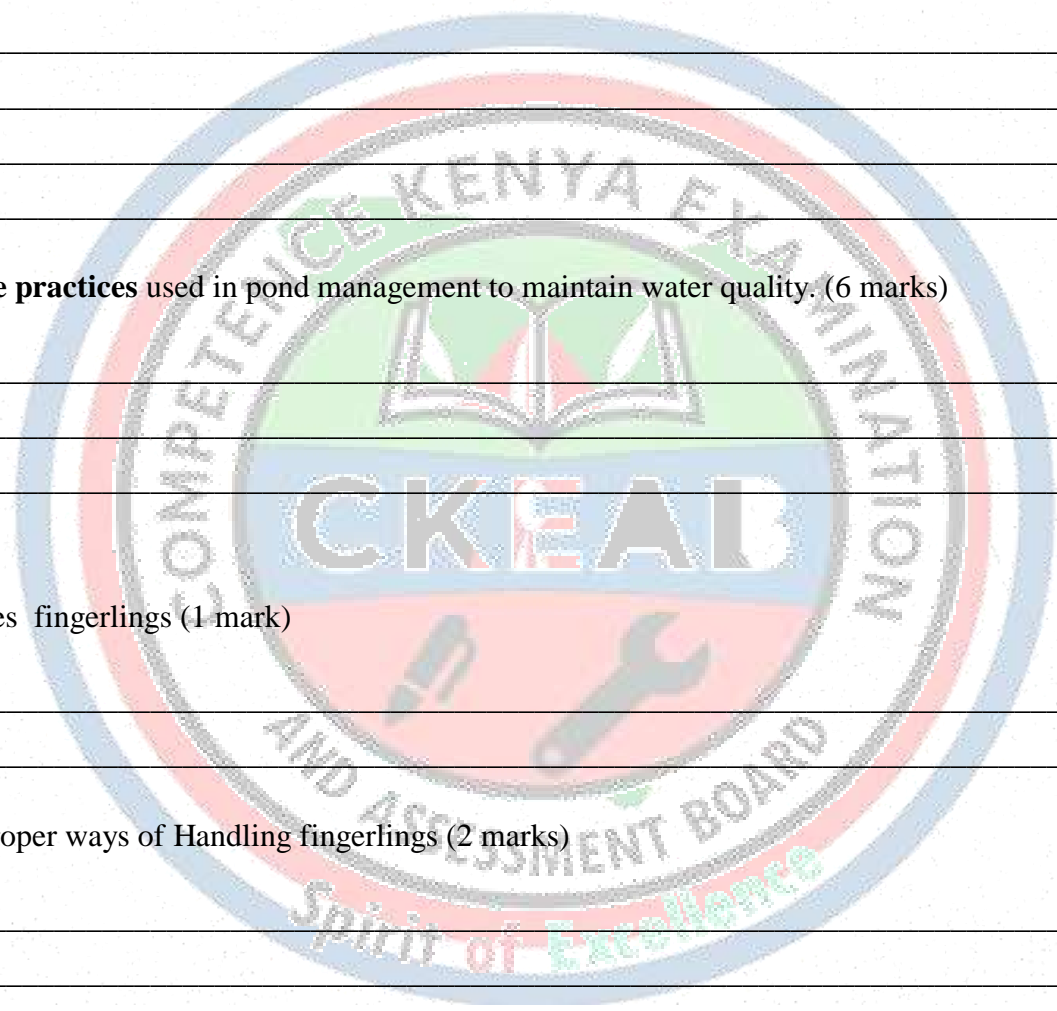
- i.

- ii.

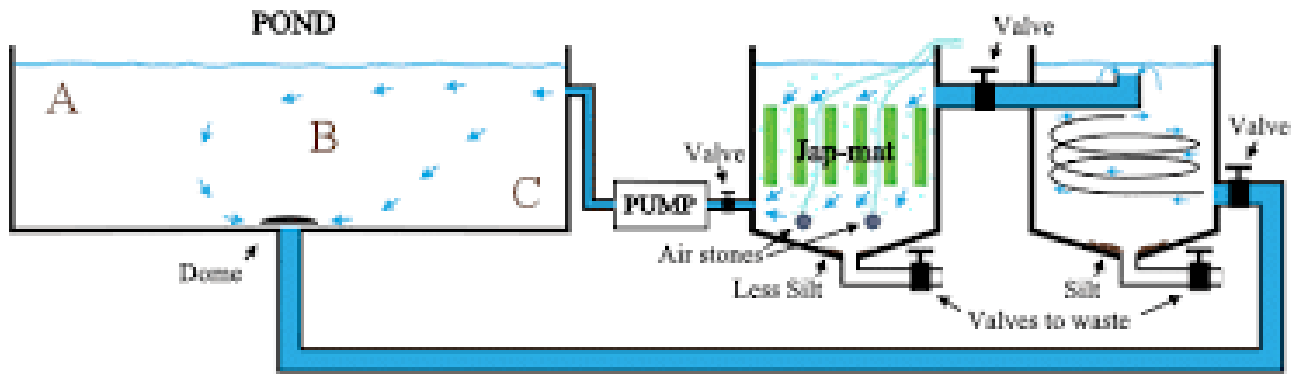
d) State two ways Fertilizing mature fish eggs (2 marks)

- i.

- ii.



16. Study the diagram below showing water circulation in a pond. (5 marks)



a) Name TWO benefits of controlling water flow in a pond. (2 marks)

- i. _____
- ii. _____

b) State TWO challenges if water flow is not regulated. (2 marks)

- i. _____
- ii. _____

c) Suggest ONE solution to overcome these challenges. (1 mark)

17. Explain **three advantages** of constructing a fish pond near a water source. (6 marks)

- i. _____
- ii. _____
- iii. _____

18. Compare **earthen ponds** and **wooden lined ponds** using **THREE** points. (6 marks)

Earthen fish ponds	Wooden lined fish ponds

19. Describe **two maintenance practices** for fish ponds during the rainy season. (4 marks)

- i. _____
- ii. _____

20. A student visits a farm and observes the following:



a) Identify the pond type. (1 mark)

b) Give **TWO** benefits of using this pond type. (2 marks)

- i. _____
- ii. _____

c) State **TWO** challenges associated with this pond type. (2 marks)

- i. _____
- ii. _____

SECTION C: (25 MARKS)

21. **Case Study: Selecting a Pond Site** (6 marks)

A farmer wants to construct a pond in an area with:

- Rocky soil
- Limited water supply
- Difficult access to roads

a) Identify **three challenges** the farmer will face. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Recommend **two solutions** to make the site suitable. (3 marks)

- i. _____
- ii. _____

22. (6 marks)

A fish pond has low oxygen levels and poor growth of fish.

a) Suggest **three possible causes**. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Recommend **three corrective measures**. (3 marks)

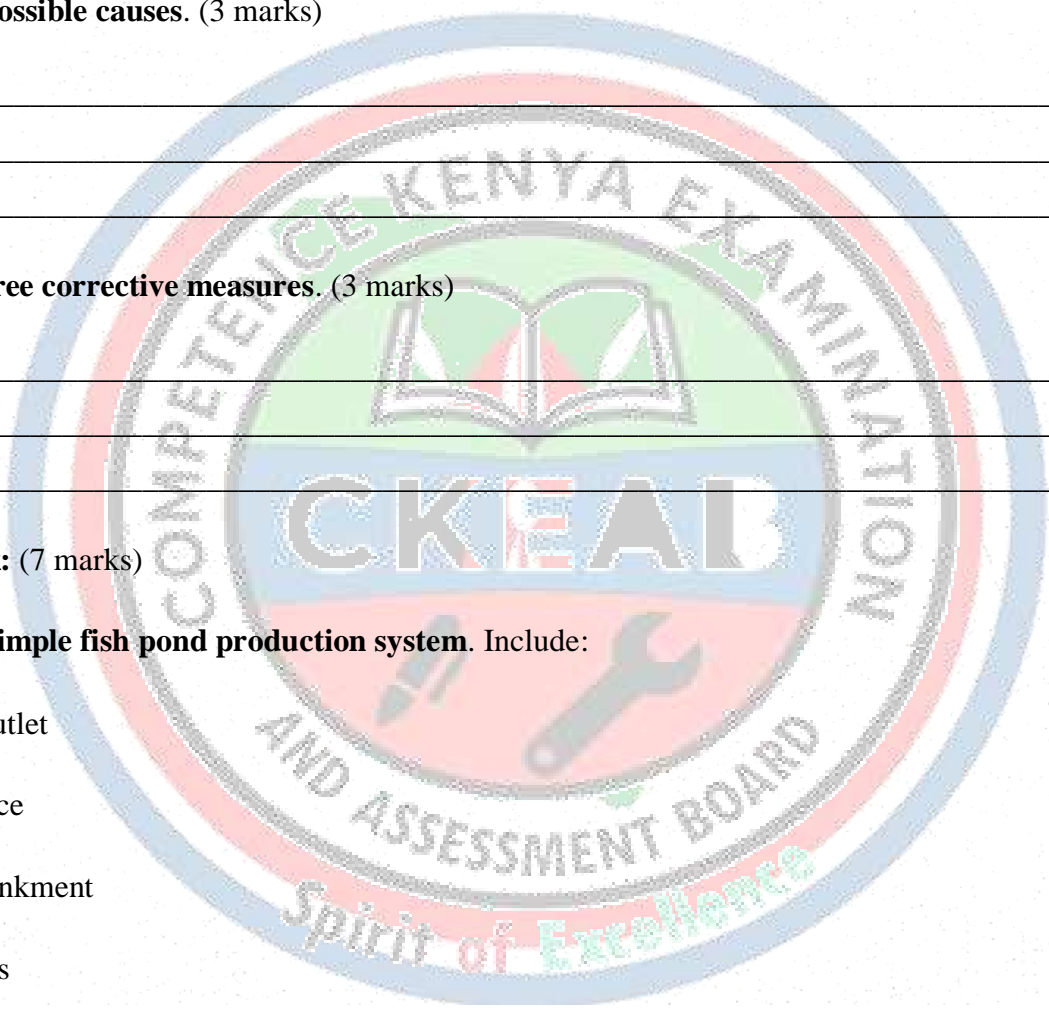
- i. _____
- ii. _____
- iii. _____

23. Drawing Task: (7 marks)

Draw and label a **simple fish pond production system**. Include:

- Inlet and outlet
- Water source
- Pond embankment
- Fish species
- Feeding area

(Labels: 7 marks)



24. (6 marks)

A school plans to start an aquaculture club. They want to build a fish pond.

a) Explain **three benefits** the pond will have to the school. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Suggest **three skills learners will acquire while constructing the fish pond**. (3 marks)

- i. _____
- ii. _____

25. (7 marks)

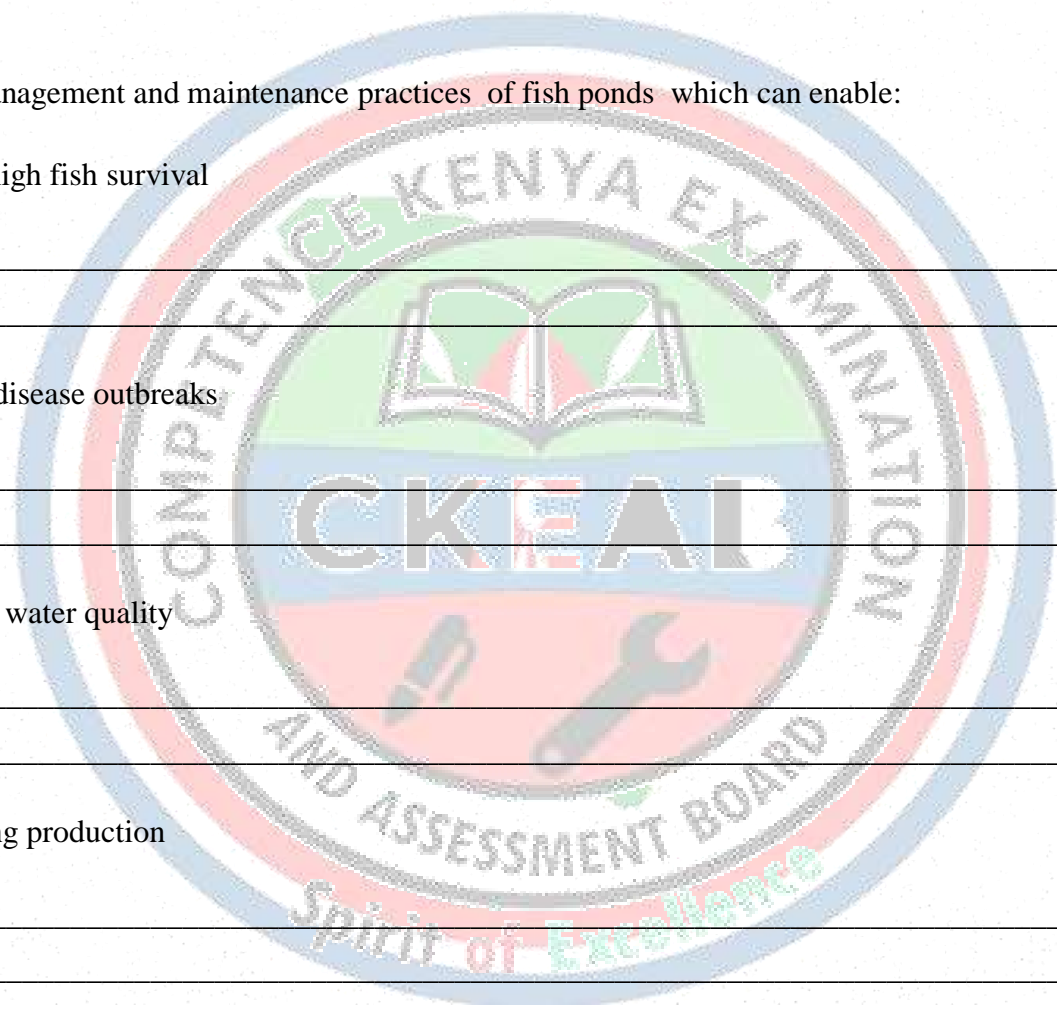
Outline proper management and maintenance practices of fish ponds which can enable:

i. Ensuring high fish survival

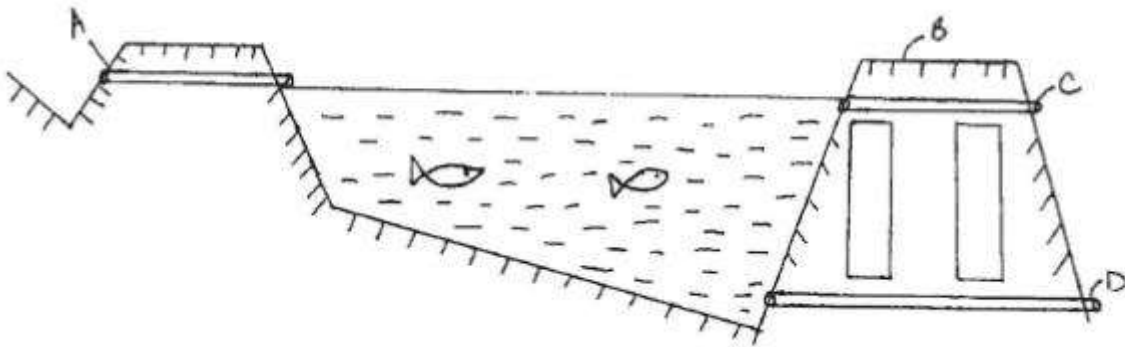
ii. Reducing disease outbreaks

iii. Improving water quality

iv. Maximizing production



26. Below is a diagram of a cross section of a fish pond

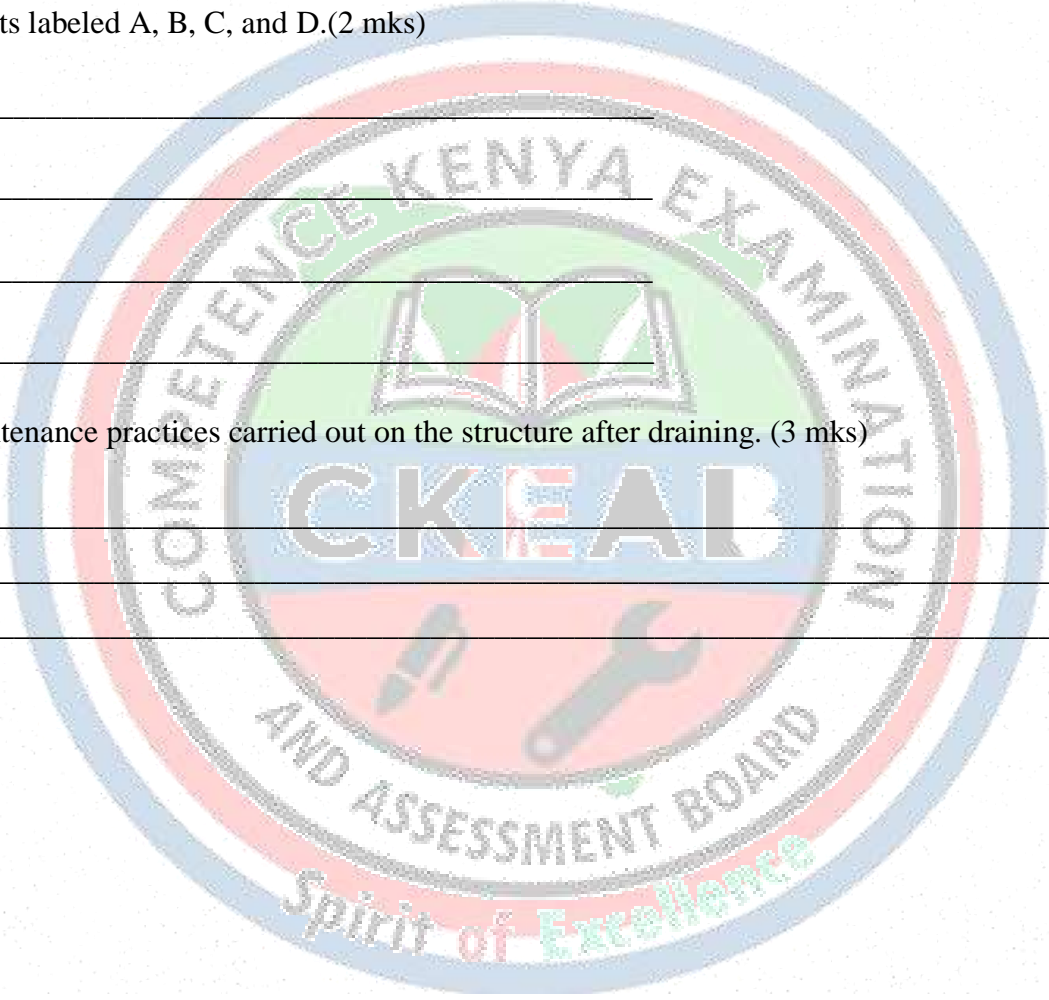


(a) Identify the parts labeled A, B, C, and D. (2 mks)

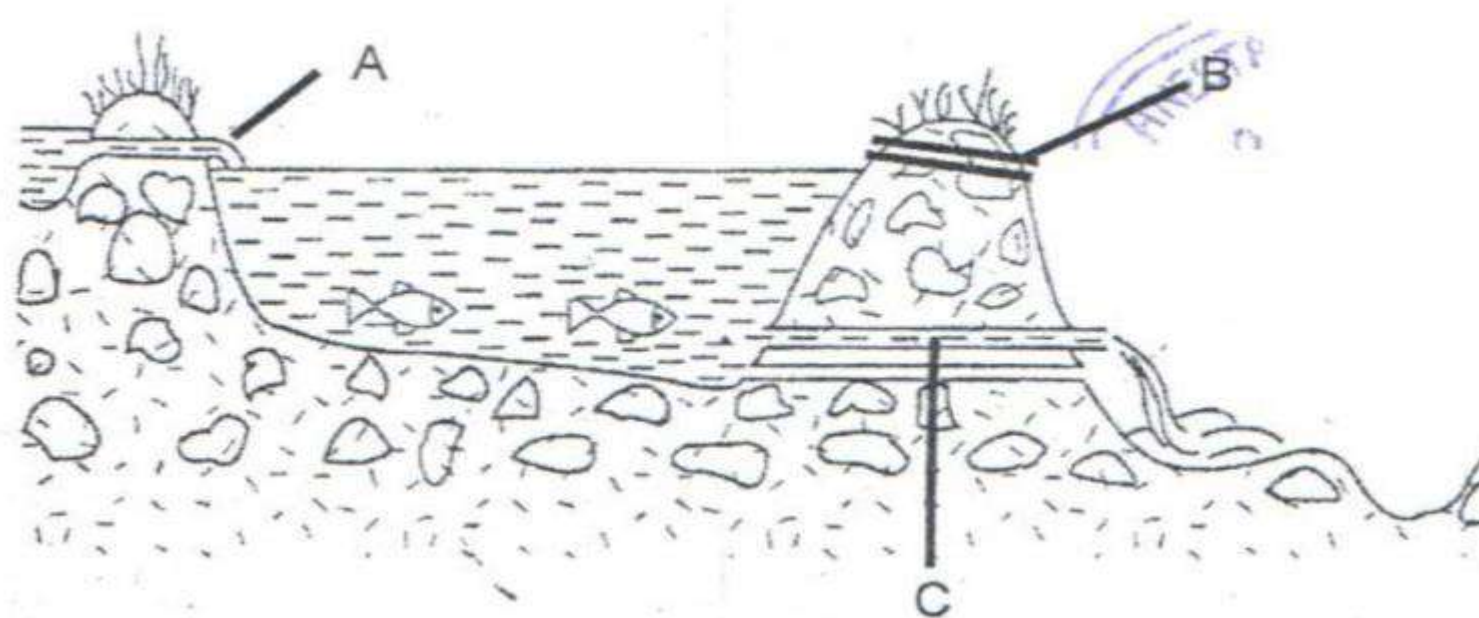
- A: _____
- B: _____
- C: _____
- D: _____

b) State three maintenance practices carried out on the structure after draining. (3 mks)

- i. _____
- ii. _____
- iii. _____



27. The diagram below shows a cross-section through a fish pond. Study it and answer questions that follow.



(a) What is the function of part labeled . (3 mks)

- A. _____
- B. _____
- C. _____

(b) State four factors that should be considered when siting a fish pond.(4 mks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

(c) State four construction features necessary in a fish pond. (4 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

STRAND 3.0: CAPTURE FISHERIES

SUB-STRAND 3.1: FUNDAMENTALS OF CAPTURE FISHERIES

SECTION A: (25 MARKS)

1. Define the term **capture fisheries**. (2 marks)

2. List **three types of capture fisheries**. (3 marks)

- i. _____
- ii. _____
- iii. _____

3. State **two differences** between industrial and artisanal fisheries. (2 marks)

- i. _____
- ii. _____

4. Name **two types of artisanal/small-scale fisheries**. (2 marks)

- i. _____
- ii. _____

5. Give **two examples** of recreational/sport fisheries in Kenya. (2 marks)

- i. _____
- ii. _____

6. State **three economic benefits** of capture fisheries in Kenya. (3 marks)

- i. _____
- ii. _____
- iii. _____

7. Name **two types of fishing vessels** used in industrial fisheries. (2 marks)

- i. _____
- ii. _____

8. List **three types of fishing gears** used in small-scale fisheries. (3 marks)

- i. _____
- ii. _____
- iii. _____



9. State **two environmental factors** that influence capture fisheries. (2 marks)

- i. _____
- ii. _____
- iii. _____

10. Name **two landing sites** for artisanal fisheries in Kenya. (2 marks)

- i. _____
- ii. _____

SECTION B: (50 MARKS)

11. Study the diagram below and answer the questions. (6 marks)



Small wooden canoe
A



Medium motorized boat
B



Large trawler
C

a) Identify the type of fisheries for each vessel. (3 marks)

- A. _____
- B. _____
- C. _____

b) State **THREE** advantages of using the large trawler. (3 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

c) Give TWO limitation of the small wooden canoe. (2 marks)

- i. _____
- ii. _____

d) Match the fishing method in Column A with the most suitable type of boat in Column B.

Column A: Fishing Method	Column B: Type of Boat
i. Artisanal fishing	A. Large trawler ship
ii. Small-scale fishing	B. Motorised fishing boat
iii. Industrial fishing	C. Canoe / dugout canoe
	D. Factory ship
	E. Row boat
	F. Fibre-glass boat

12. Explain **three differences** between subsistence and commercial artisanal fisheries. (6 marks)

- i. _____
- ii. _____
- iii. _____

13. Describe **three types of gears** used in artisanal fisheries and their uses. (6 marks)

- i. _____
- ii. _____
- iii. _____

14. Explain **four economic roles** of capture fisheries in the Kenyan economy. (8 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

15.: (6 marks)

A group of learners visits **Kakamega landing site** and observes:

- i. Small wooden canoes
- ii. Nets and hooks
- iii. Fish sold directly to locals

a) Identify the type of fishery observed. (1 mark)

b) State TWO benefits of this fishery to the community. (2 marks)

- i.

- ii.

c) Name TWO types of gears used at this site. (2 marks)

- i.

- ii.

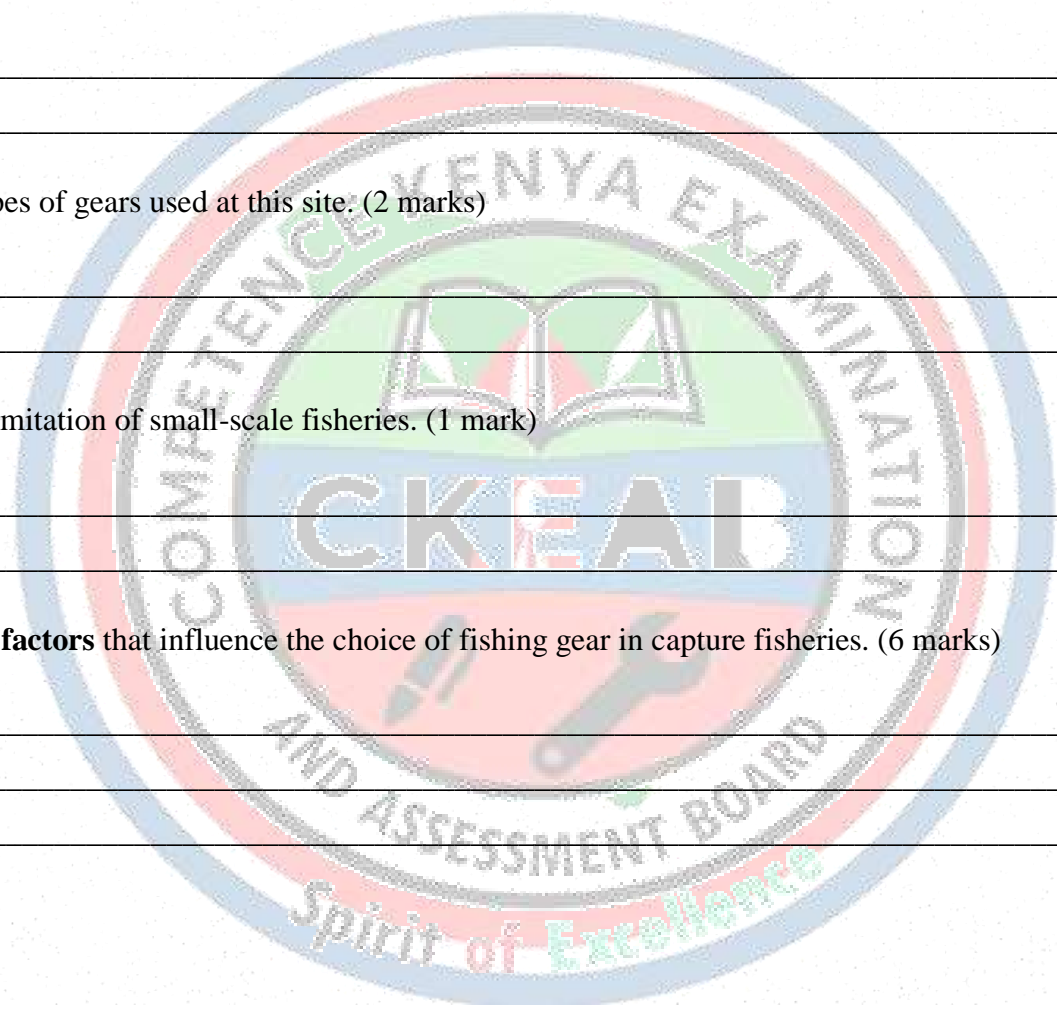
d) Explain ONE limitation of small-scale fisheries. (1 mark)

16. Explain **three factors** that influence the choice of fishing gear in capture fisheries. (6 marks)

- i.

- ii.

- iii.



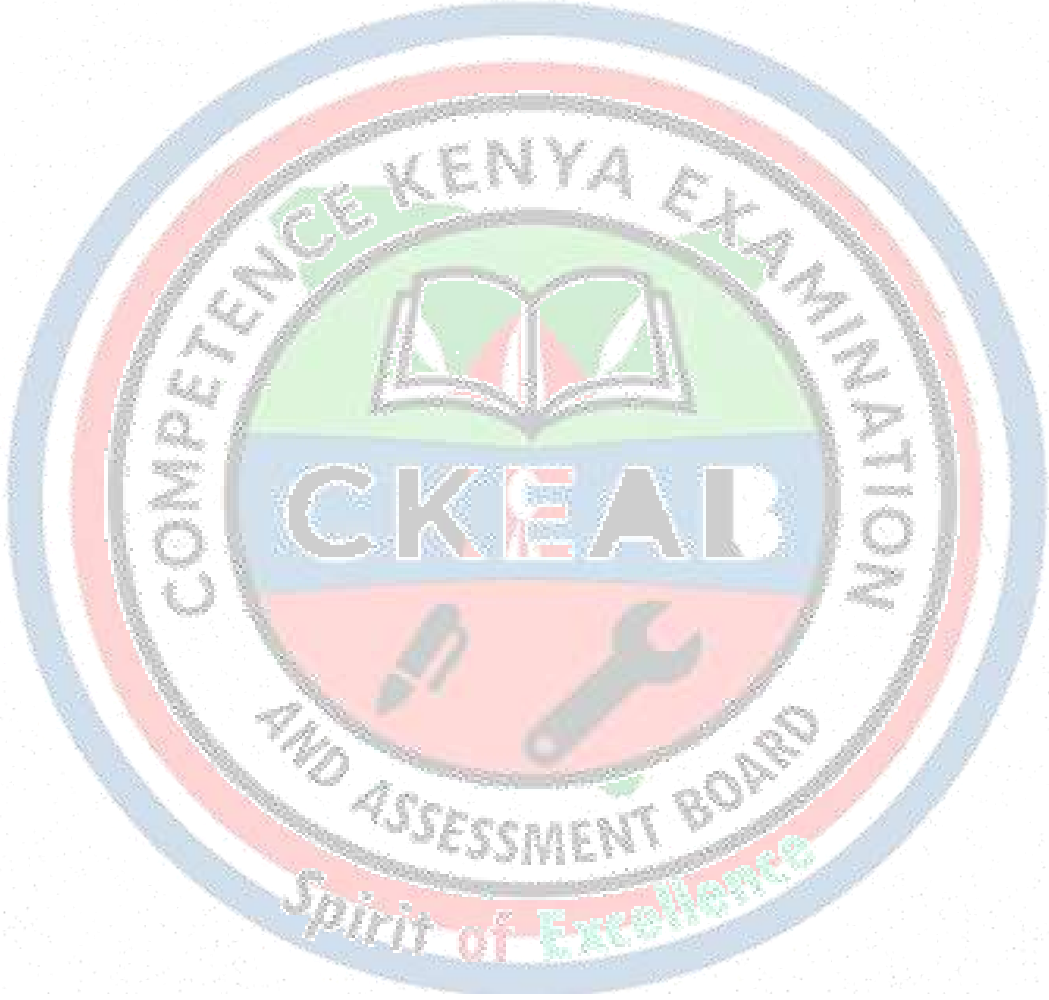
17. Diagram/Illustration Question: (6 marks)

Draw a simple illustration showing three types of capture fisheries And Label Them Clearly. (6 Marks)

Industrial,

Artisanal,

Recreational)



18. Compare **industrial fisheries** and **artisanal fisheries** using FOUR features: size of vessels, type of gear, number of fishers, and market target. (8 marks)

Feature	Industrial fisheries	Artisanal fisheries
Size of vessel		
Type of gear		
Number of fishers		
Market target		

19. Explain three environmental challenges that may affect capture fisheries in Kenya. (6 marks)

- i. _____
- ii. _____
- iii. _____

20. (a) Describe two safety measures fishers should observe while fishing in the ocean. (4 marks)

- i. _____
- ii. _____

SECTION C: (25 MARKS)

21.: (7 marks) A fishing company wants to start an industrial fishery in Lake Victoria.

a) Identify **three requirements** for establishing the fishery. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Explain **two advantages** of industrial fisheries over artisanal fisheries. (2 marks)

- i. _____
- ii. _____

c) State **two challenges** the company may face. (2 marks)

- i. _____
- ii. _____
- iii. _____

22. (6 marks)

Fish catches at a landing site have been declining.

a) Suggest **three possible reasons** for the decline. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Recommend **three measures** to improve fish catches sustainably. (3 marks)

- i. _____
- ii. _____
- iii. _____

23. (6 marks)

a) Give **three advantages of small scale fisheries**. (3 marks)

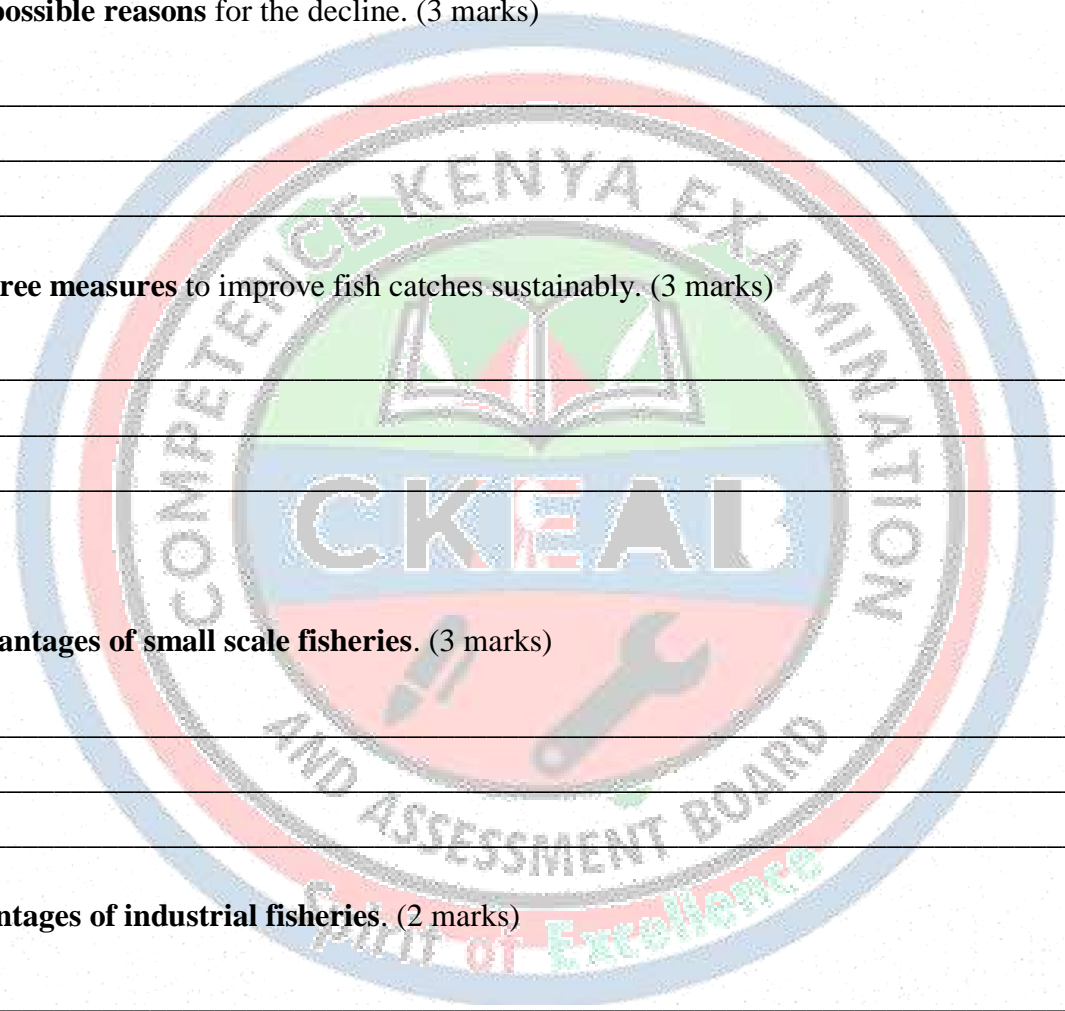
- i. _____
- ii. _____
- iii. _____

b) Give **two advantages of industrial fisheries**. (2 marks)

- i. _____
- ii. _____
- iii. _____

c) Outline two disadvantages of small scale fisheries. (2 marks)

- i. _____
- ii. _____



24.: (6 marks)

A student visits a fish landing site and records:

- i. Number of fishers: 10
- ii. Types of fish: Tilapia and Nile perch
- iii. Fishing gears: Gill nets and hooks

a) Identify the type of fishery. (2 marks)

b) Suggest TWO improvements for better productivity. (2 marks)

- i.

- ii.

c) Explain ONE reason why monitoring is important at the landing site. (2 marks)

25. (6 marks)

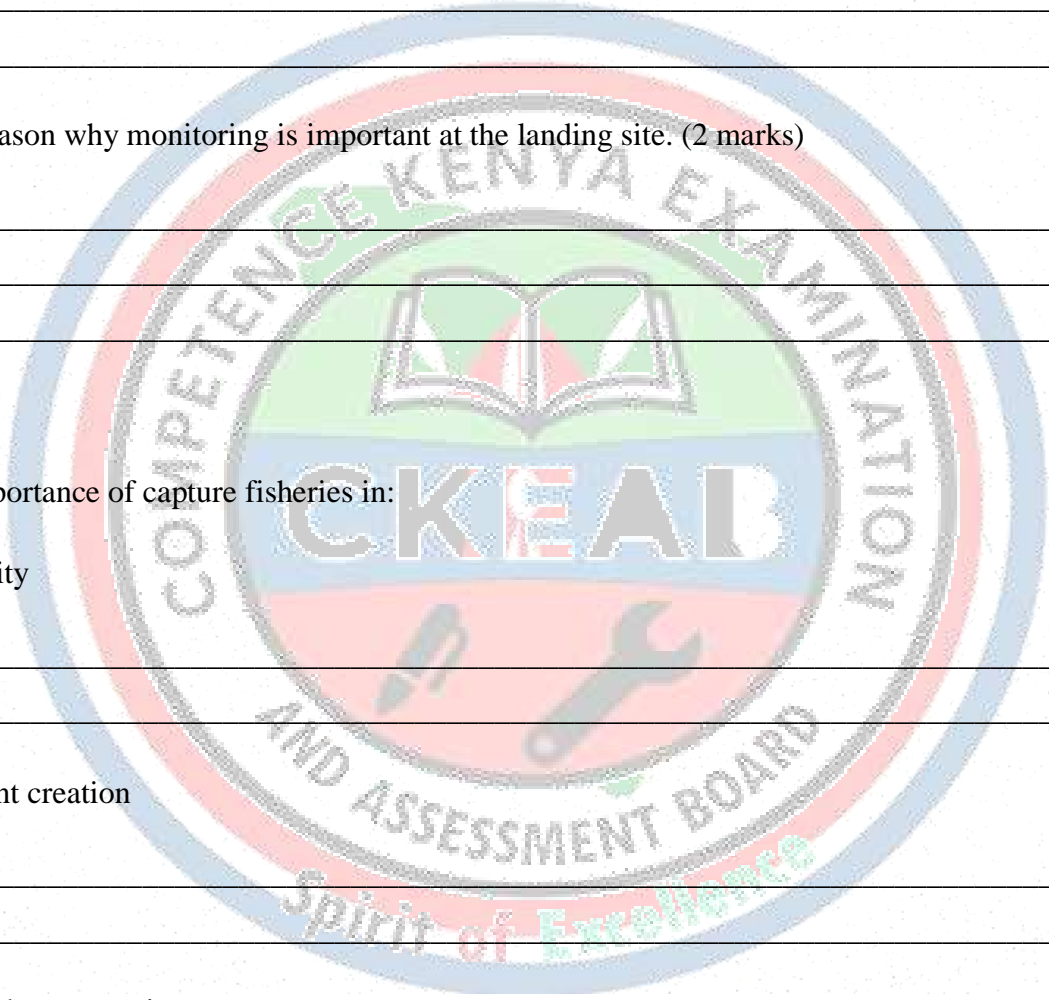
(a) Explain the importance of capture fisheries in:

i. Food security

ii. Employment creation

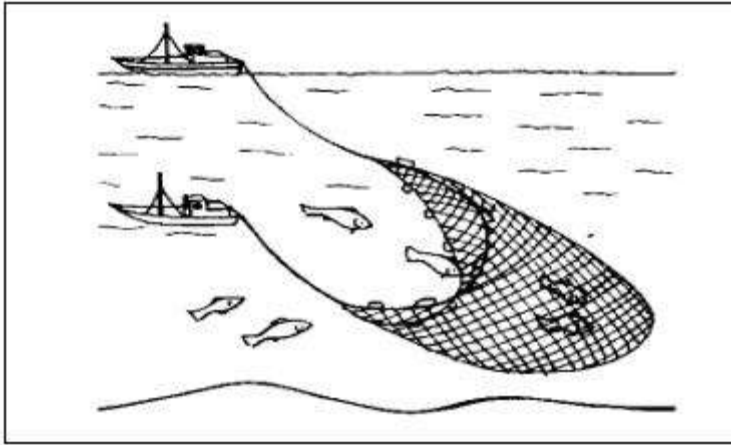
iii. Foreign exchange earnings

iv. Supporting local industries



v. Provide three examples of **main fishing grounds in Kenya** . (6 marks)

26. Use the diagram below to answer the following questions.



a. Identify the fishing method. (1 mark)

b. Describe how the method above is used to catch fish. (4 marks)

- i.

- ii.

- iii.

27. a. Name two methods used in deep sea fishing. (2 marks)

- i.

- ii.

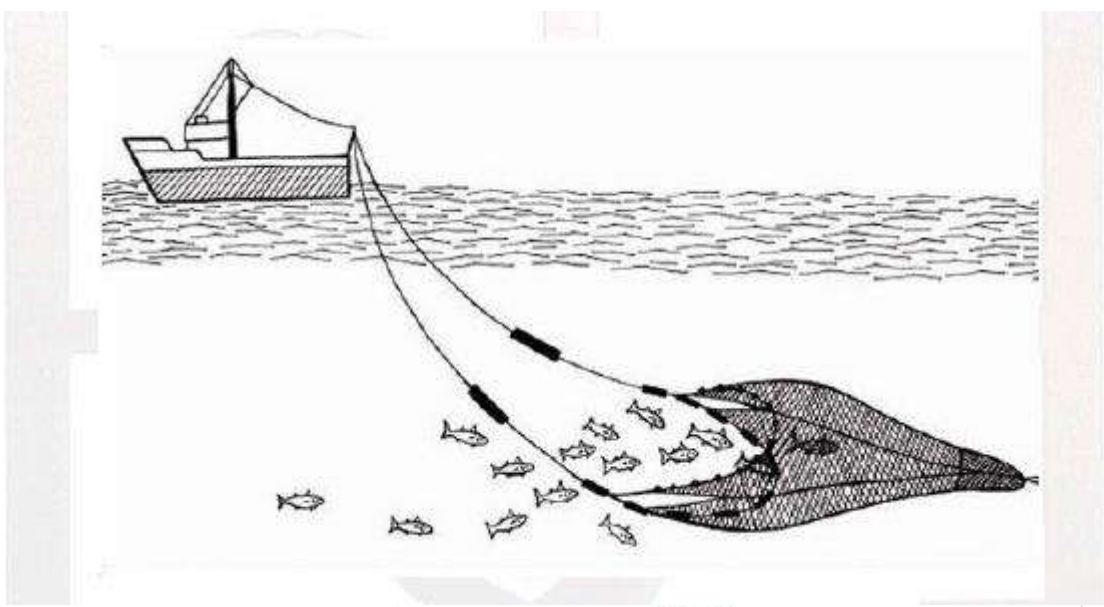
b. State three ways in which the government of Kenya is promoting the fishing industry. (3 marks)

- i.

- ii.

- iii.

28. The diagram below shows a fishing method. Study it and use it to answer questions 3(a) and (b).



(a) Identify the fishing method represented by the diagram above. (1 mark)

(b) Describe how it is used to catch fish. (4 marks)

- i.

- ii.

- iii.

- iv.

- v.

29. a) (i) Differentiate between pelagic and demersal types of fish. (2 mks)

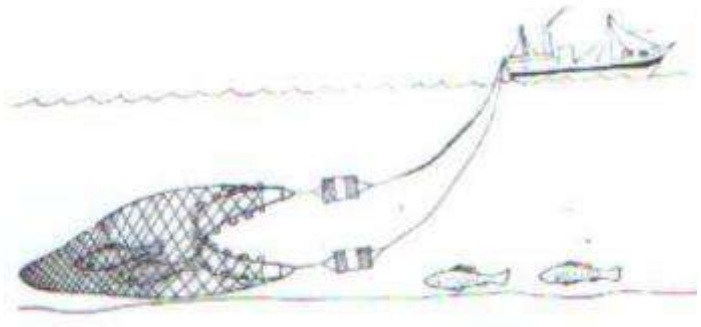
ii) Name any three traditional methods of fishing. (3 mks)

- i.

- ii.

- iii.

b) The diagram below shows a method of fishing. Use it to answer question that follow



i) Name the fishing method indicated in the diagram above. (1 mk)

ii) Describe the fishing method shown in the diagram above (5 mks)

(iii) State two problems associated with the method shown on the diagram (2 mks)

c) State four advantages of rearing tilapia in fish farms in Kenya compared to other fish species. (4 mks)

- i. _____
- ii. _____
- iii. _____
- iv. _____

(d) Explain four problems facing fishing on L. Victoria. (8 mks)

- i. _____
- ii. _____
- iii. _____
- v. _____

30. (a) (i) Give two examples of dermasal fish. (2marks)

- i. _____
- ii. _____
- iii. _____

(ii) State three characteristics of fish farming in Kenya. (3marks)

- i. _____
- ii. _____
- iii. _____



STRAND 3.0: CAPTURE FISHERIES

SUB-STRAND 3.2: SAFETY AND SURVIVAL TECHNIQUES

SECTION A: (25 MARKS)

1. Define the term fishing vessel accident. (2 marks)

2. List four common types of accidents that may occur in fishing vessels. (4 marks)

- i.

- ii.

- iii.

- iv.

3. Name three causes of drowning on fishing vessels. (3 marks)

- i.

- ii.

- iii.

4. State two symptoms of hypothermia. (2 marks)

- i.

- ii.

5. List three safety equipment found on a fishing vessel. (3 marks)

- i.

- ii.

- iii.

6. Name two signals used in case of distress at sea. (2 marks)

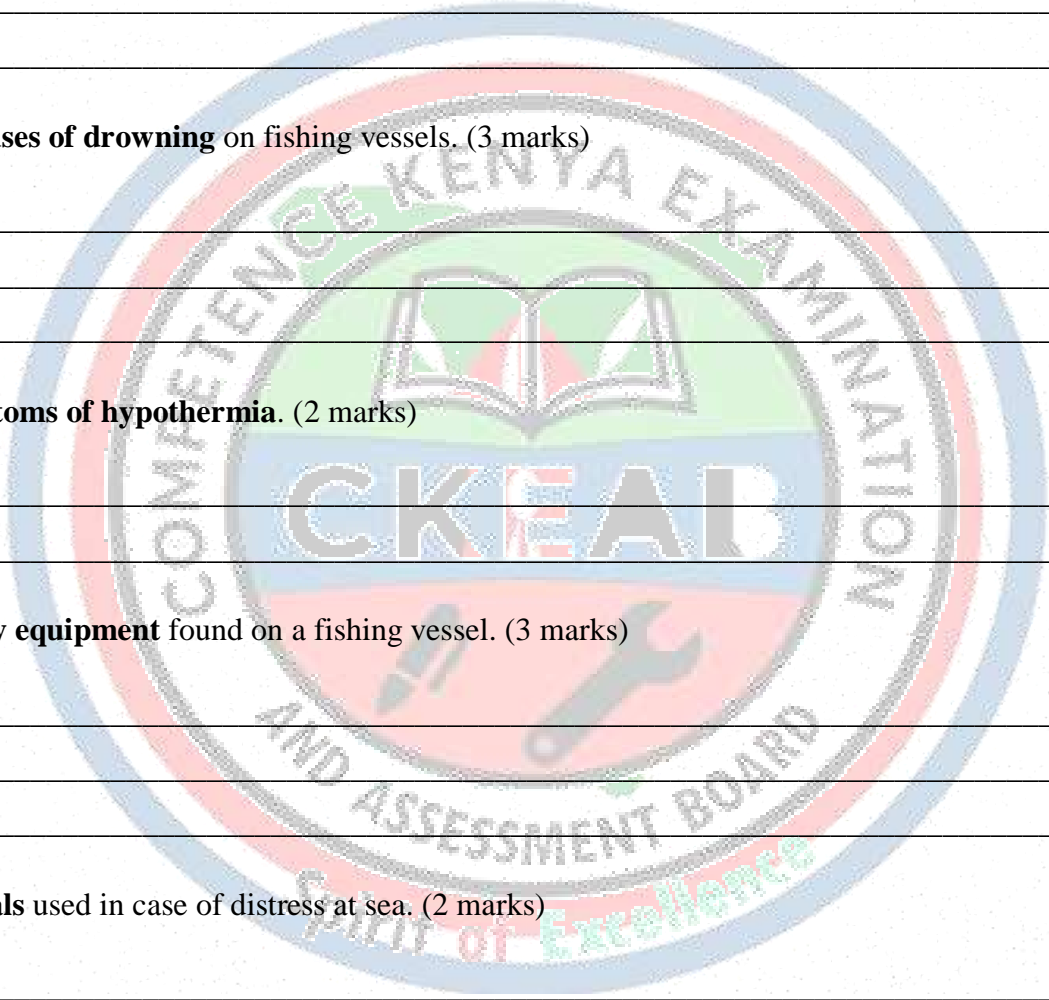
- i.

- ii.

7. State two reasons why life jackets are important in fishing activities. (2 marks)

- i.

- ii.



8. Give two types of first aid supplies that should be in a fishing vessel first aid kit. (2 marks)

- i. _____
- ii. _____

9. Name two causes of sea sickness. (2 marks)

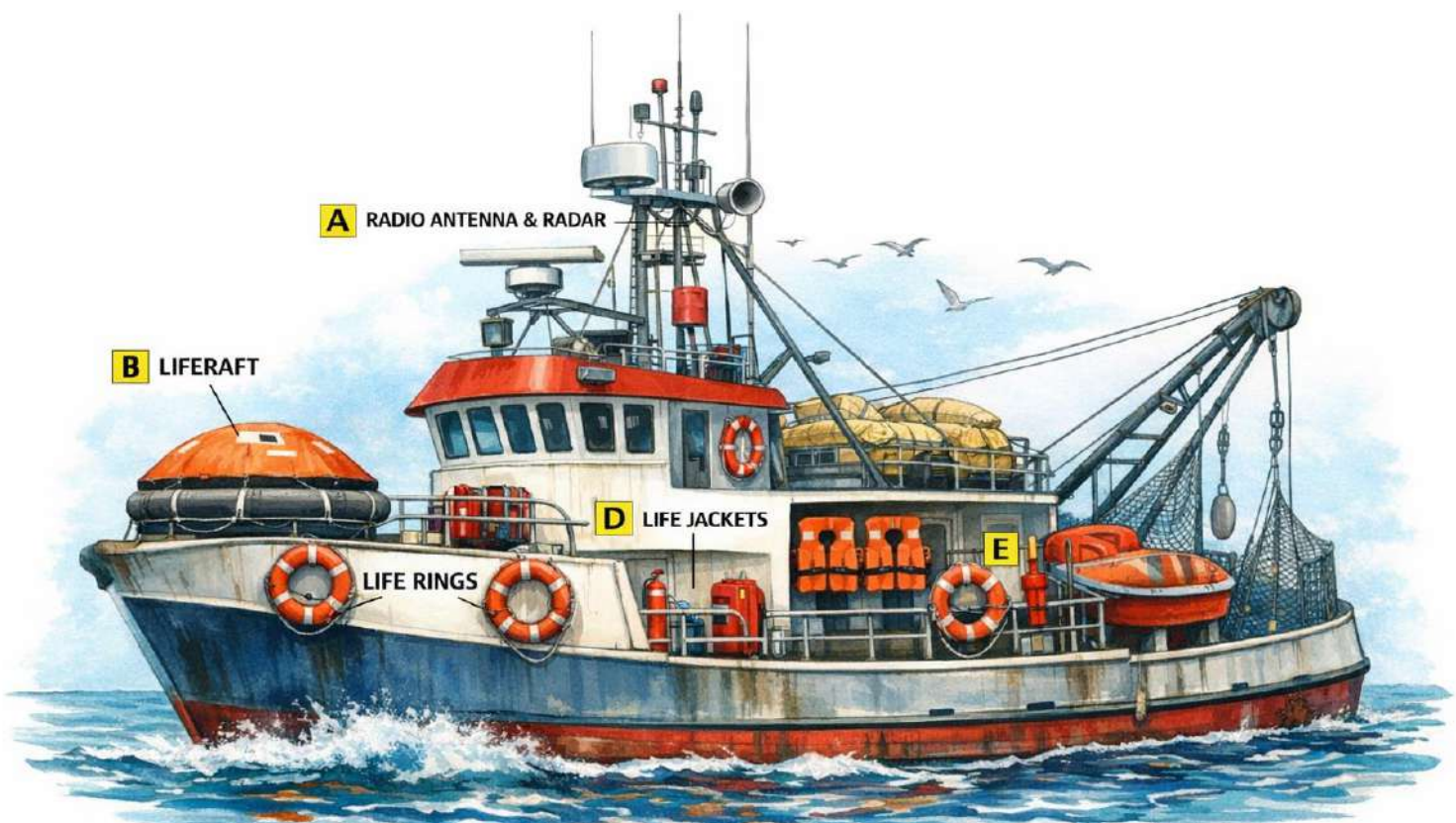
- i. _____
- ii. _____

10. List two types of fire prevention equipment used on fishing vessels. (2 marks)

- i. _____
- ii. _____

SECTION B: (50 MARKS)

11. Study the diagram below of a fishing vessel. (6 marks)



a) Identify two types of safety equipment labeled. (2 marks)

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

b) State **two functions** of life buoys. (2 marks)

- i. _____
- ii. _____
- iii. _____

c) Give **one reason** why fire extinguishers are important. (1 mark)

d) Suggest **one additional safety equipment** not shown. (1 mark)

12. Explain **four causes of accidents** in fishing vessels. (8 marks)

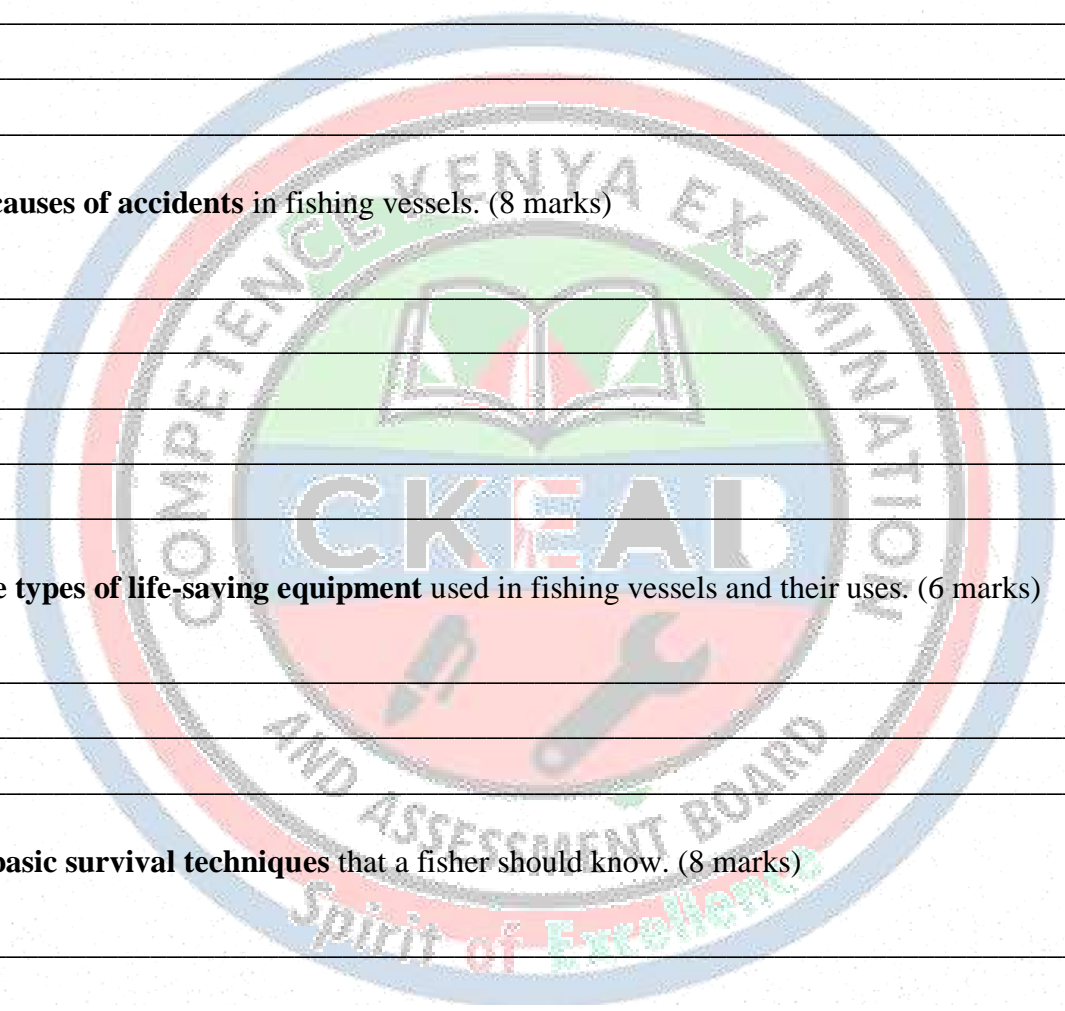
- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____

13. Describe **three types of life-saving equipment** used in fishing vessels and their uses. (6 marks)

- i. _____
- ii. _____
- iii. _____

14. Explain **four basic survival techniques** that a fisher should know. (8 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____



15. (6 marks)

During a fishing trip, a fisher falls overboard.

a) Suggest **three immediate actions** the crew should take. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) State **two survival techniques** the fisher should practice in water. (2 marks)

- i. _____
- ii. _____

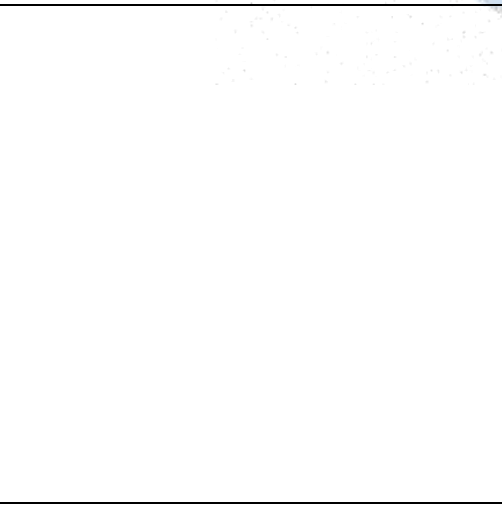
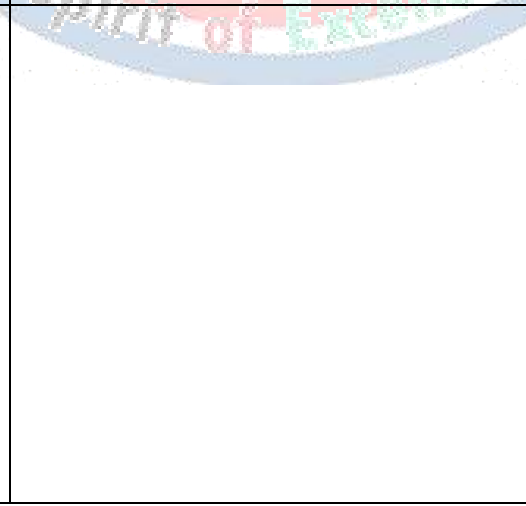
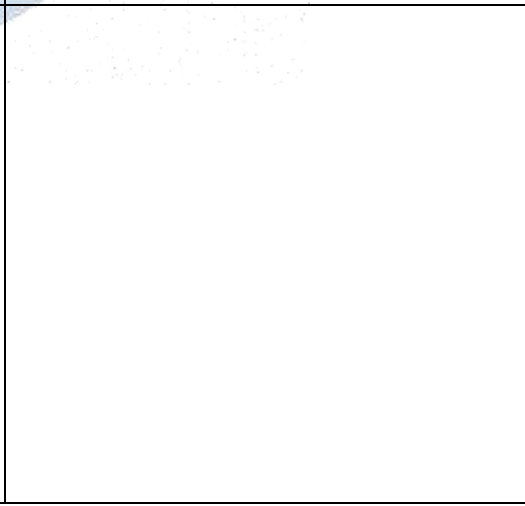
c) Identify **one type of equipment** that could have prevented the accident. (1 mark)

16. Explain **three safety practices** to follow during engine failure on a fishing vessel. (6 marks)

- i. _____
- ii. _____
- iii. _____

17. (6 marks)

Draw the following safety equipment in a fishing boat (6 marks)

Life jackets	Fire extinguisher	Life raft
		

Life buoys	Flares/signals	Radar

18. Explain **three steps to take during a fire outbreak** on a fishing vessel. (6 marks)

- i. _____
- ii. _____
- iii. _____

19. Compare **life jackets** and **life rafts** in terms of use, advantages, and limitations. (6 marks)

	Life jackets	Life rafts
Advantages		
Limitations		

20. Explain **two reasons why first aid knowledge is critical** for fishers. (4 marks)

- i. _____
- ii. _____

SECTION C: (25 MARKS)

21. (6 marks)

A small-scale fishing boat capsizes in Lake Victoria during a storm.

a) Identify **three likely causes** of the accident. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Recommend **three survival techniques** that the fishers should use. (3 marks)

- i. _____
- ii. _____
- iii. _____

22. (6 marks)

A fisher suffers a minor cut from fishing gear and shows signs of infection.

a) State **three steps in giving first aid**. (3 marks)

- i. _____
- ii. _____
- iii. _____

b) Suggest **two preventive measures** to avoid injuries on fishing vessels. (3 marks)

- i. _____
- ii. _____

23. (6 marks)

You are the crew of a fishing vessel with limited safety equipment.

a) List **five priority items** you would ensure are available before departure. (3 marks)

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____

b) Explain **two survival techniques** you would practice with your crew. (3 marks)

- i. _____
- ii. _____
- iii. _____

24. (7 marks)

Explain the importance of **safety equipments in marine fisheries technology**:

- i. _____
- ii. _____
- iii. _____

25. (6 marks)

During a fishing trip, a fire breaks out in the engine room.

a) Identify **two causes** of fire on a fishing vessel. (2 marks)

- i. _____
- ii. _____

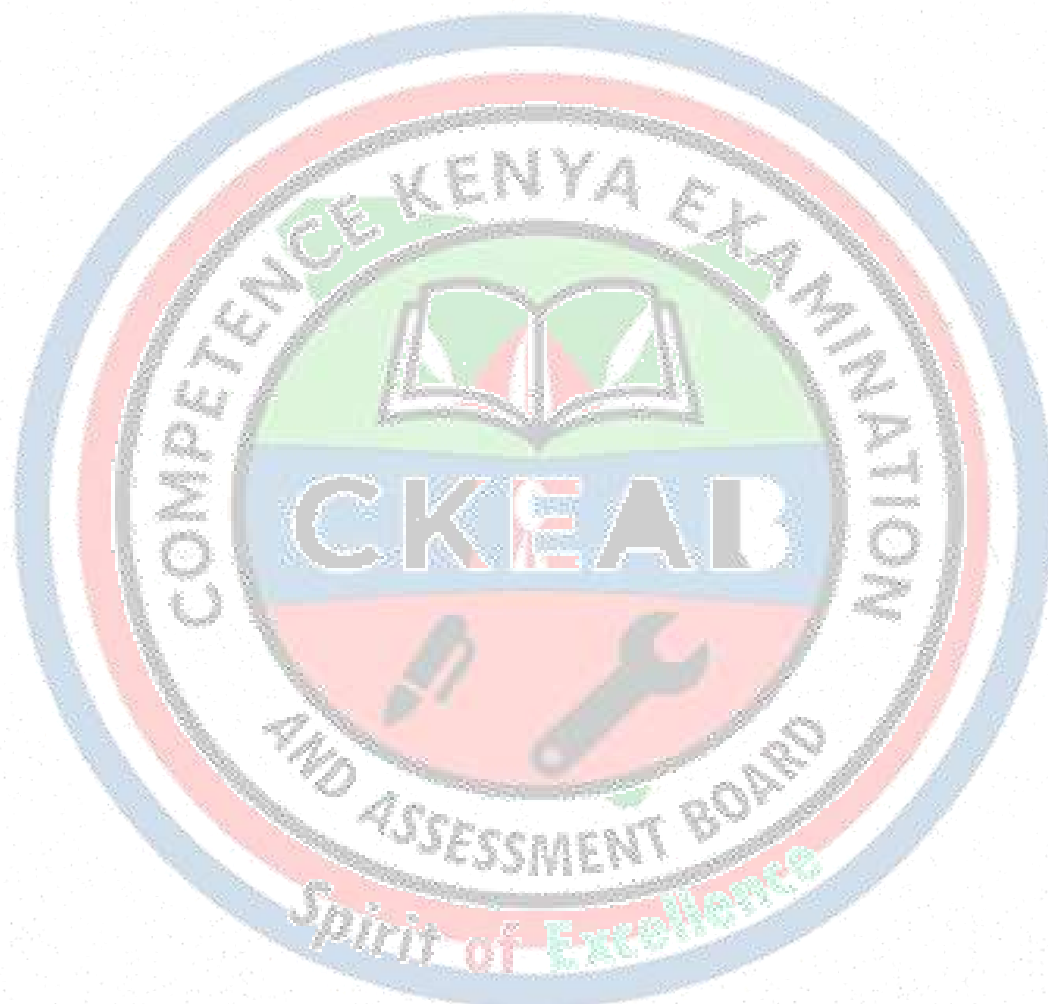
b) Suggest **three immediate actions** to control the fire. (3 marks)

- i. _____
- ii. _____
- iii. _____

c) State **one safety equipment** used to prevent fire spread. (1 mark)

d) Match the safety equipment in **Column A** with the correct function in **Column B**.

Column A: Safety Equipment	Column B: Function
i. Life jacket	A. Used to send distress signals during an emergency
ii. Lifebuoy (life ring)	B. Helps a person to float in water
iii. Fire extinguisher	C. Used to rescue a person who has fallen into water
iv. First aid kit	D. Used to put out small fires on the boat
v. Flares	E. Used to give emergency treatment for injuries



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